

AUGUST 21, 1926

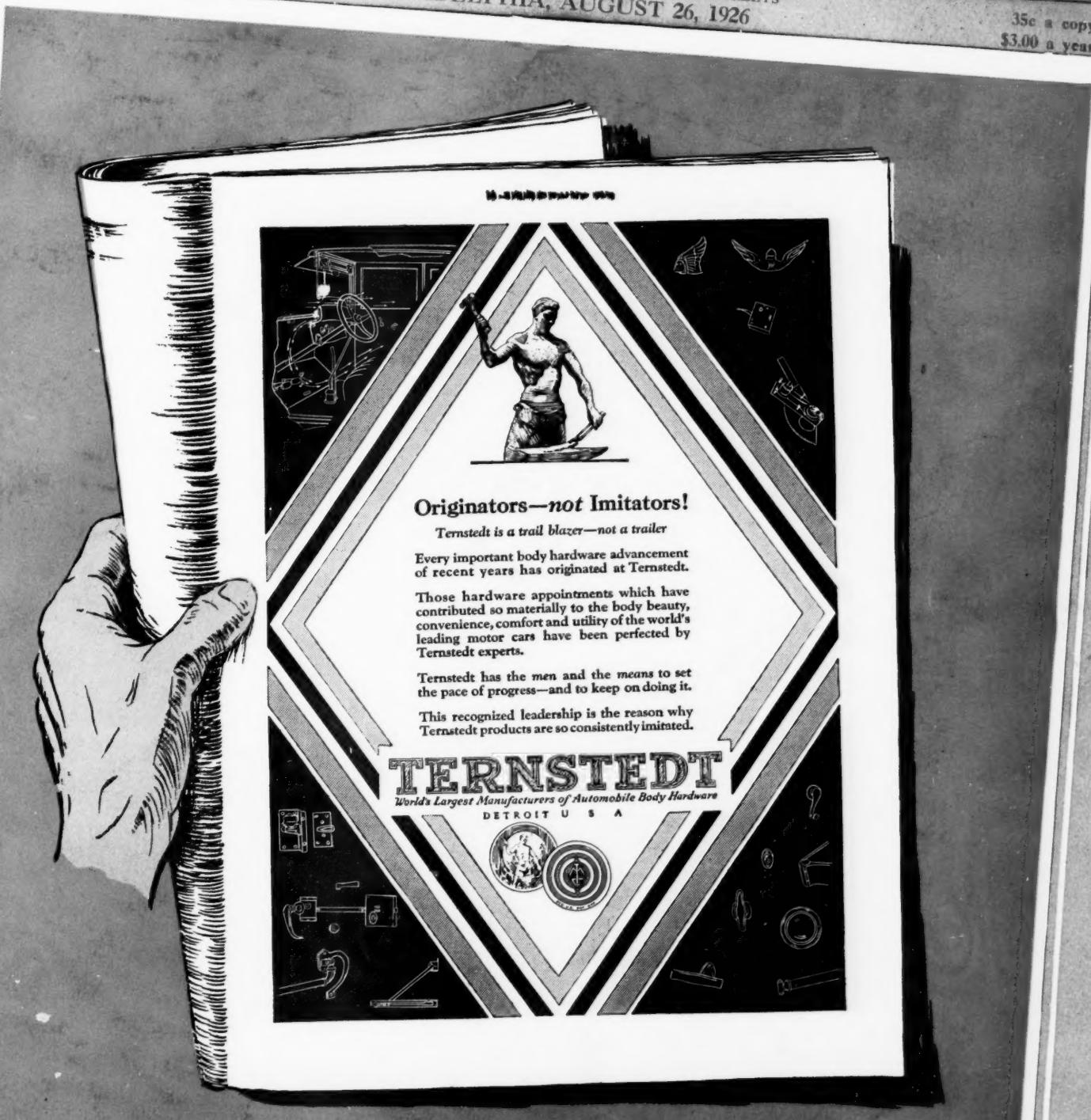
News of the Industry Begins Page 348

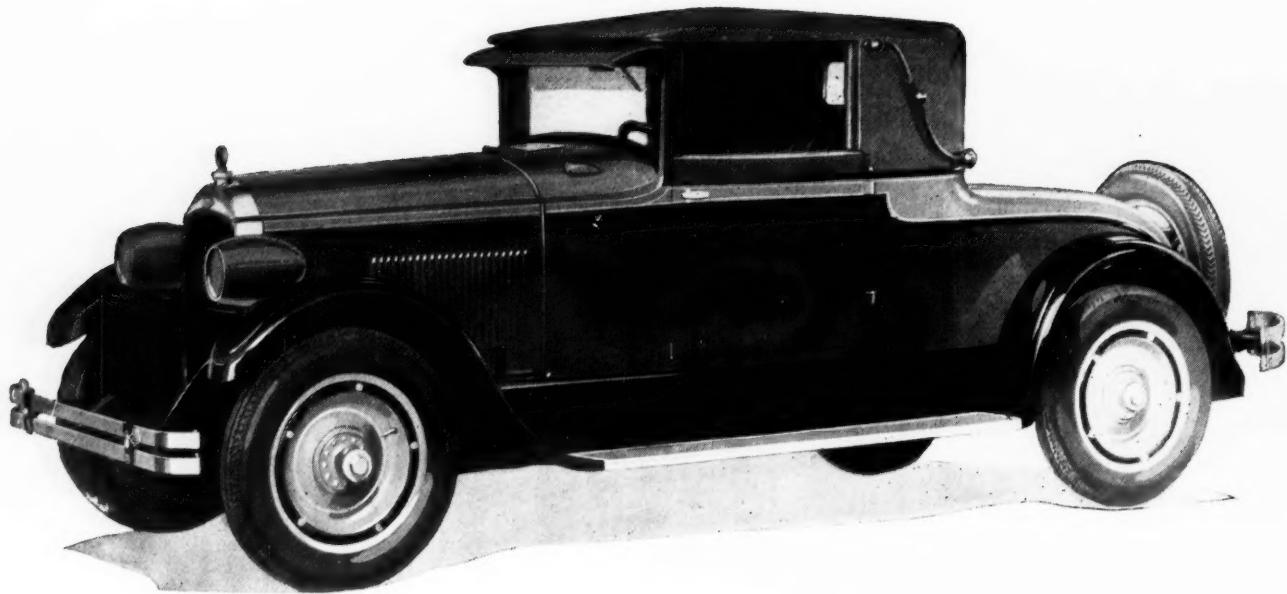
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AUTOMOTIVE INDUSTRIES

VOLUME 55

Philadelphia, Thursday, August 26, 1926

NUMBER 9

Industry at Peak of Optimism But Playing Safe

Business continues brisk with signs favorable for the future. Companies now organized for promotion of good times and are leaving nothing to chance.

By Norman G. Shidle

DETROIT in particular and the automotive industry in general is very nearly at a peak of optimism today. Wages are good, employment plentiful, sales have fallen off less during the summer than had been expected by many observers and production departments are turning out vehicles at a high rate of speed.

Concrete evidence that this general feeling of optimism is basic appears in the form of plant expansion programs which are under way or which have been completed recently by many important automotive units.

In the face of such genuine enthusiasm about the outlook for the immediate future, it is natural for some to step aside from the procession temporarily and question the solidity of the foundation upon which this structure of optimism has been reared; to compare the current situation with conditions as they existed in 1920 and in 1923 and to look for similarities or differences indicating probable results and effects.

Today's automotive condition, physically and psychologically, does resemble in some aspects that of several previous occasions which were followed by retrenchment periods of greater or less importance. But certain outstanding and significant differences with those previous occasions exist as well.

In previous periods of unusual and somewhat unexpected prosperity, the automotive industry has been known to plunge ahead with heavy production schedules, mammoth expansion programs and large organization extensions with only a genial confidence and a fond hope as the basis for its progress.

Today that is not the case. There is full realization in practically every factory in the industry that a continuance of volume sales and of net profits depends upon very concrete and specific marketing activities and production economies on the part of individual manufacturing concerns.

Once there was a general tendency in good times to hope for the best and let the future take care of itself.

Now the industry is organized for the promotion and continuance of good times.

Sales on Systematic Basis

Sales departments have analyzed territories carefully, have set relatively high standards for retailers to achieve in sales and are going about in a systematic and organized way to help their dealers successfully fulfill the task set. Production departments—in some cases being pushed for cars just as hard as ever they were in 1920—are straining every effort to meet the demand made upon them, but not without due regard to costs and manufacturing economies. Production at any cost is not the slogan in any automotive factory today and never seems likely to be again. Even in those factories which are many thousands behind in deliveries, careful watch is being made of overhead expense, the amount of indirect labor is being kept to a minimum and working forces are being analyzed to keep the number employed to a minimum.

Sales executives are watching general business trends carefully and are fully cognizant of the weak as well as strong spots in the economic structure. It

is realized that agricultural conditions are not all that they might be and that fall buying may be good without being record-breaking. The general increase in rate of inventory turnover at the factories, of course, is an outstanding difference between present circumstances and those which existed in 1920. Short term buying commitments have become the rule, so that even a very sudden falling off in demand would not result in the losses from carrying heavy inventories which once hit the industry so hard.

Expenses Carefully Watched

Even in the expansion of factories, today's growth is being built on a sounder basis than in previous years. Increases in production capacity no longer involve in every case major increases in overhead expense. Frequently the capacity of a factory is being stepped up materially through the better utilization of existing floor space or the installation of newer and more effective tool or factory equipment. Brick and mortar expansion, while going on in some cases today, is not being carried forward with the happy disregard for fundamental economics which sometimes has characterized such developments in the past.

And careful study of conditions indicates that optimism today is being bolstered up by a very systematic and sustained campaign of organization in both production and sales departments. There is less scrambling for sales and production at any cost than during any similar period of prosperity in the history of the industry. Whispering hope has been replaced by sound organization and consistent effort, the rocks upon which current automotive stability rest to a large extent.

The clarity, logic and scope of the organized, functioning activities of the average automotive sales department today as compared with three or five years ago is hardly conceivable to the casual observer. Some companies have proceeded many miles further along these lines than others, to be sure, but the general average of effective organization is at least 400 per cent greater than it was five years ago.

With this merchandising sieve gun of increasingly sound organization behind the optimism which pervades most manufacturing executives today, the prospects of continued automotive stability seem excellent despite some superficial manifestations which have the aspect of inflation or coming inflation. Combined with this is the fact that most executives still have pretty clearly in mind the lessons learned from past boom periods and are not likely to succumb to the same pitfalls as on previous occasions.

This is not to say that serious problems do not still face the industry nor that anything like final accomplishment has been reached either in the production or the sales departments. What it does mean is this:

Automotive concerns today almost all are willing to recognize and admit frankly the importance of the various problems which face them and to employ men and spend the money necessary to attack those problems actively and vigorously. No longer is there much tendency to blink at facts and try to laugh off serious problems by the application of some kind of superindustrial hypnosis. That the industry is look-

ing facts in the face pretty well at present is indicated by general recognition of the following:

1. The factory has a very definite obligation in connection with used cars. It can hold new car production to a level low enough to permit the dealer to trade used cars profitably and intelligently and it can assist him with merchandising helps and advice to sell used cars just as it assists him to sell new cars.

2. There are not enough ready made dealers to go around. Dealer education is necessary. It consists, not of mouthing or mailing to the retailer a grist of inspirational platitudes, but of providing him with practical worth-while information and data which will help him in the transaction of his everyday problems. This assistance must be specific in character and broad scope.

3. Parts distribution is a merchandising as well as a mechanical problem. The car manufacturer can get the retail parts business only by doing a better job both of his share of distribution and merchandising than does the independent parts makers. He cannot get it simply by believing that he should have it by rights.

4. Production economies still are possible and must receive unremitting study. Incentive wage payment plans for both direct and indirect labor, new machine tool developments, handling of material advances and many more detailed phases of manufacturing procedure offer a fertile field for continued analysis and improvement.

5. The manufacturer's part in the service problem will grow greater rather than less as the years go on. Selling methods sooner or later must be applied to service; mere excellence of mechanical service will not be sufficient to make a shop successful. The manufacturer will probably have to provide both the stimulus and the methods of procedure in the advancement of the idea of selling service.

These are only a few of the important problems to which a majority of progressive factories are giving *organized* attention today. For a long while, manufacturers have "done something" along all these lines, but today the something is being done in a systematic organized fashion—and the continuity and effectiveness of the effort is growing in proportion to the increase in organized activity.

Another Safety Valve

Another factor which seems likely to operate as a safety valve to possible excesses of enthusiastic optimism at this time is the somewhat uneven distribution of prosperity which exists. While most companies have been visited with an unusually large dose of prosperity this year, some important producers—as pointed out last week—have failed to come up to 1925 profit achievements. The existence of some relatively modest performances of this kind even during an era of such general prosperity is likely to give pause to the few super optimists who might otherwise see with glasses a bit too rosily tinted.

Thus it appears that, with general business conditions still on a sound basis, a reasonable degree of optimism about the automotive future for the rest of 1926 and the first half of 1927 is justified. Production in the last six months probably will not exceed that of last year by as large a margin as did the first half, but there is no indication of any serious declines at present. On the other hand, the strenuous and continuous sales promotion effort which manufacturers are planning to put behind their products in the next twelve months forms some basis for the assumption that optimism is based on a belief in hard work as well as in good luck.

French Cars Make Clean Sweep of *British Grand Prix*

Delage wins 287-mile race with average speed of 71.61 miles per hour. Bugatti finishes second. Third place also won by Delage. Six others fail to finish.

By M. W. Bourdon

THE British Grand Prix—the fourth of the five international motor races (the Indianapolis "500" being one) to decide the championship of the world—was won at Brooklands on Saturday, August 7, by a Delage car driven by Robert Senechal and, after the 83rd lap, by Louis Wagner.

The distance of 287 miles was covered by the winner in 4 hr. 0 min. 56 sec. at an average speed of 71.61 miles an hour.

The only Bugatti (entered privately and driven by Captain Malcolm Campbell) was second at a speed of 68.82 miles an hour; and Delage III., driven by Robert Benoist and M. Dubonnet, was third at 68.12 miles an hour.

None of the other nine cars that started out of an entry list of thirteen succeeded in completing the course. Thus France has won three out of the four championship races which have, so far, been run. The fifth is to be held in Italy.

The following are the cars that started, with the names of their drivers in parenthesis; all had eight cylinders excepting the Aston Martin and Halford Special which had four and six cylinders respectively.

Talbots I, II and III (Segrave, Divo and Moriceau).
Delages I, II and III (Wagner, Senechal and Benoist).
Bugatti (Campbell).

Aston Martin (Eyston).

Halford Special (Halford).

All had a piston displacement of just under 1½ litres.

The two Talbots driven by Segrave and Divo led in the first laps, followed closely by Benoist in Delage III., with Senechal in Delage II. some distance behind. Before the end of the first lap the front axle of Moriceau's Talbot broke; both front wheels leaned inwards at an acute angle, but, after a few wild swerves, Moriceau brought his car to rest near the pits, so to end the narrowest escape of the day.

Curves Built in Track

To reproduce road racing conditions as much as possible two series of three transverse sandbanks had been arranged on the finishing straight, necessitating the cars negotiating two pronounced "S" corners on each of the 110 circuits that made up the full distance of 287 miles. Thus braking, gear shifting and acceleration were tested, in addition to speed. The maximum speed at which the "S" bends could be taken was about 30 m.p.h.; between the two was a stretch of clear track about 250 yards in length.

For the first ten laps the race lay between the Delage and Talbot teams. The other cars were obviously slower. After the tenth lap it had become apparent that, provided the Delage stayed the course, one of them must win.

Segrave (Talbot), though at the beginning he was leading and was definitely faster than Benoist, was not happy with his car. His front wheel brakes showed signs of binding from time to time, and, possibly because of this, he was specially careful in his approach to the sandbanks. He began to slow down at the beginning of the finishing straight and changed into a lower gear when still about 300 yards from the banks. The Delages, all of which held the track as though they ran on rails, continued with undiminished speed until 40 yards of the sandbanks. At this point the change-down was made with obvious ease, and the speed so reduced that the "S" turns were made at not more than 25 m.p.h.

Driver Burns His Feet

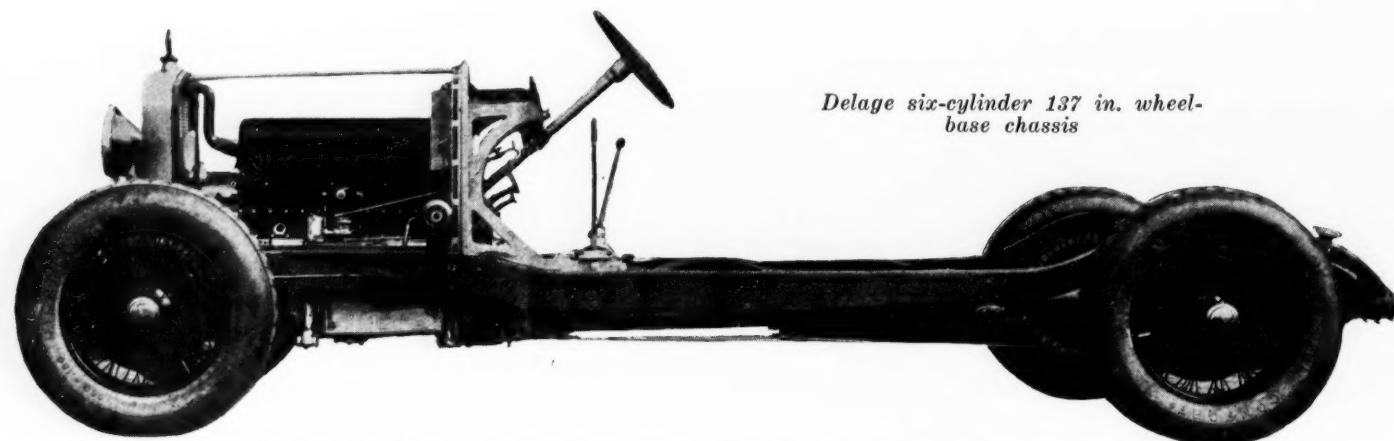
During the seventh lap Wagner, on Delage I., who had already stopped once to wrap asbestos round his exhaust pipe, drew into the pits, leapt out of his car and put his right foot in a pail of water as a crude and somewhat unsatisfactory method of averting impending incineration. The risk of fire was too great, and the car was withdrawn.

At half-time Benoist led, Senechal was second, Halford third, Segrave fourth, Campbell (who had been running steadily and consistently throughout) fifth, Divo sixth, and the Aston-Martin seventh. On its 45th lap the Aston-Martin withdrew with a cylinder-head gasket burnt out. Halford withdrew in his 82nd lap with gear-box trouble. Segrave retired in his 62nd lap, and Divo, his one surviving team-mate, was eliminated in his 88th lap with various troubles.

Wagner took over Senechal's Delage in the 83rd lap, owing to the overpowering heat from the engine having brought Senechal to a state bordering on collapse, and drew into first position when Benoist pulled up at the pits with his engine on fire. Dubonnet took Benoist's place and made up a little time, while Wagner once more used a bucket of water to alleviate the burning of his right foot. But the race was practically decided by the 100th lap, and Wagner was obviously destined to win if only his car remained unburnt.

Segrave was awarded the Stanley Cup for the fastest lap of the day. His second lap was covered at 85.99 miles an hour, a speed which Benoist was unable to beat, though for long periods his lap speed was about 85 miles an hour.

New *Delage* Emphasizes Foreign Trend Toward Light "Sixes"



Delage six-cylinder 137 in. wheel-base chassis

French firm, heretofore specializing on small four-cylinder model, brings out medium-sized "six" of 193 cu. in. piston displacement and 137 in. wheelbase. Brakes of servo type.

By W. F. Bradley

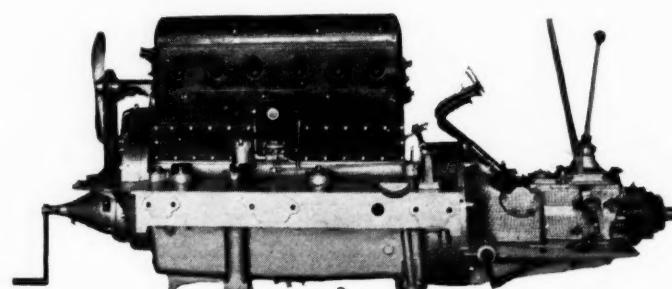
IT is significant of the tendency in France that Delage has just announced a medium size six-cylinder model having a piston displacement of 193 cu. in., in a chassis of 137 in. wheelbase, which will be presented to the public at the forthcoming Paris Salon.

Up to the present Delage has specialized on a four-cylinder model of 129 cu. in. and has built a limited number of high grade sixes of 363 in. displacement. The new six has been brought out to meet the growing demand for greater flexibility than can be secured from four cylinders.

Having a pronounced external resemblance to the firm's existing models, the new Delage comprises six cylinders in one casting, of 75 by 120 mm. bore and stroke, with detachable iron head having vertical valves operated by pushrods and rockers from a chain driven camshaft in the aluminum base chamber. The cylinder holding-down bolts are concealed by detachable aluminum plates, and the Smith carburetor, manufactured in

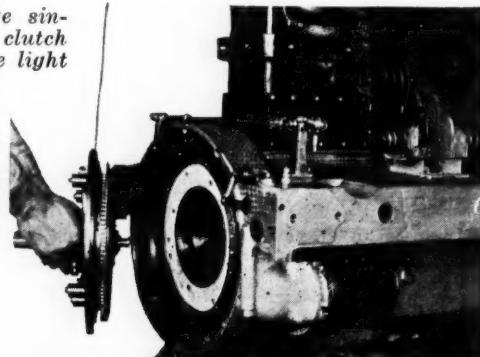
the Delage shops, is bolted up direct to left hand side of the engine and is fed from a two-gallon vacuum tank on the forward face of the aluminum dashboard.

A circular web seven-bearing crankshaft is used; connecting rods are I-section and pistons are built-up type of cast iron and aluminum. The electric generator and



Carburetor side of *Delage* 193 cu. in. six-cylinder engine

New *Delage* single plate clutch used on the light "six"



the magneto, with semi-automatic advance, are in tandem on the left hand side, with the water pump in the same line but ahead of the timing gear housing. Crank-case webs are platform type, brought up to the side rails, with attachment to them by six pairs of bolts. Lubrication is full pressure type by a gear pump driven off the camshaft.

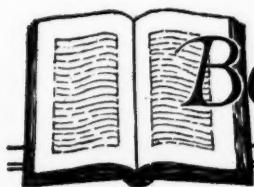
A single plate clutch is used, together with a four-speed transmission, the housing of which forms a unit with the engine and has change speed and brake levers mounted on the top of it. Drive is transmitted through a single universal joint shaft contained in a torque tube,

to a spiral bevel gear contained in a banjo housing. Steering can be mounted either left or right hand.

The four-wheel Perrot brakes are operated by pedal through a Dewandre vacuum servo mechanism, the cylinder being placed on the right hand side of the gearbox. There is separate hand control of the four brakes, without the servo. It is claimed that the brakes will arrest the car within a distance of 50 yards from a speed of 62 miles an hour.

The only distinctive feature of the suspension, which is by semi-elliptic springs front and rear, both sets being directly under the frame members, is the mounting of the ends of the springs between a pair of semi-circular bronze blocks, with provision for taking up lateral play. Wire wheels are standard equipment.

With a wheelbase of 138 in., track of 56 in., the length available for body (dashboard to tangent of rear wheel) is 80 in.



Books for the Business Bookshelf

An Advertiser's Guide

The Dartnell Advertiser's Guide.—1926 Edition. The Dartnell Corporation, Chicago. 444 pp. Illus.

A VAST amount of statistical information of particular interest to advertising men, including those in the automotive business has been included in this practical handbook and should be sufficient to make the book worth while to advertisers without the extensive directory material which is also included. The statistical data include population, production, retail and wholesale, purchasing power and various other items of information which are commonly employed in market analysis.

The directorial material includes geographical and alphabetical lists of leading agencies and data concerning publications of all types. Interspersed among the statistics are short articles on general advertising subjects. In all it appears to be a book which should find favor with all advertising men.

Plotting the Ratio Chart

The Ratio Chart in Business. Percy A. Bivens. Codex Book Co., Inc., New York. 177 pp. Illus.

SINCE the development of ratio charts they have become more and more popular for use by business executives wishing to obtain graphical analyses of their business. Unfortunately, however, there still remain many who either do not use graphic analysis at all or confine their charts to the arithmetic variety, thereby losing a very large share of the benefits to be derived from graphics. Possibly the most influential reason for this reluctance to use ratio charts is the erroneous idea that it is a complicated procedure only open to highly expert statisticians.

Mr. Bivens does not waste any time with general discussions of business graphics but, presupposing a knowledge of them by the reader, plunges at once into ratio plotting. That his work will convince many of the simplicity of ratio charts may be questioned but his clear exposition of their really important advantages for many business purposes should bring about more widespread use and probably will also suggest new uses to those who already find ratio charts of value.

Two Volumes on Metallurgy

Handbook of Non-Ferrous Metallurgy. Donald M. Liddell, Editor-in-chief. McGraw-Hill Book Co., New York. 2 Vol. 1440 pp. Illus. \$12.

THIS exhaustive study in non-ferrous metallurgy has been prepared by a staff of 36 specialists. It is designed for use by the student, the engineer and the consultant, although the metallurgist may also find it of considerable value, particularly in solving problems out-

side his own especial field. Much of the material is elementary but on a number of subjects information is presented which is not readily available elsewhere.

The first volume is devoted to chapters on certain processes and materials which are common to all metallurgical operations while the second volume is devoted to the metallurgy of a particular metal or group of metals when there is no basic difference in their metallurgy.

Charts, tables and pictures are extensively used in order to clarify the text matter and a successful attempt has been made to provide an authoritative and convenient reference book on non-ferrous metallurgy.

Reference Work on Mathematics

Mathematics for Engineers. Raymond W. Dull. McGraw-Hill Book Co., New York. 780 pp. \$5.

ENGINEERS are often confronted with a mathematical problem whose solution requires more extensive reference work than can be found in the usual engineering handbooks and must therefore turn to text books with their obvious disadvantages for the man who is merely seeking the quickest solution to his problem. Mr. Dull's work should prove very useful to engineers because it has been prepared for the sole purpose of providing a quick and convenient reference.

The various mathematical subjects are not necessarily treated separately, as they are in text books, but are interlocked when such procedure will make either or both of the subjects clearer or more practical. Practically every phase of mathematics of interest to engineers is covered, from simple numeric computations through algebra, geometry, trigonometry, differential calculus, curve analysis and integral calculus to integration and summation.

Absolute and relative errors are given considerable space and graphical solutions parallel the analytical solutions wherever possible. The fundamentals of the slide rule are discussed and a set of simple rules given to be used in place of a memorized list of settings.

Foreign Trade Convention

American Foreign Trade in 1926—Thirteenth National Foreign Trade Convention. National Foreign Trade Convention Headquarters, New York. 490 pp.

THIS book contains a verbatim report of the proceedings, the discussions, the speeches at the Group Session, and the addresses at the General Session of the Thirteenth National Foreign Trade Convention held at Charleston, S. C., April 28 to 30, 1926. There is also included a list of the 1014 delegates present at the convention with the organizations and companies which they represented.



THE general trend of American exports of all kinds for the Government fiscal year ending July 1, 1926, was downward as compared with the preceding year, but manufactured products, of which automobiles, accessories, tractors and motorcycles are a part, showed a gain of 16 per cent over the year 1924-1925.

The movement of automotive products has been very good in comparison to that of other commodities exported by this country, both finished units and raw materials. Study of the analysis of the year's export business just made by Dr. Julius Klein, director, Bureau of Foreign and Domestic Commerce, indicates that all types of automotive products stand in a favorable relation to our general American export trade.

Since continuance of automotive prosperity in the export market is indirectly, although quite definitely, allied with the overseas business of this country as a whole, Dr. Klein's expert survey of the situation as it stands today holds many specific elements of automotive interest.

"The fiscal year just closed," writes Dr. Klein, "brought once more into striking relief the rapid growth in American exports of manufactured goods and the immense importance of foreign sales of this class as a stabilizer in our total foreign trade as well as in our domestic industry."

15 Per Cent Increase

"Exports of finished manufactures increased as compared with the preceding fiscal year by no less than 16 per cent. They were 60 per cent greater than in 1921-1922—only four years back. They were nearly three times as great in value as in the five year period before the war. Even after allowing for higher prices they were more than double the pre-war average.

"This tremendous growth reflects the ever rising efficiency of American industry and the energy and intelligence of American salesmanship in foreign markets.

"The American manufacturer has evidently disposed of sundry tattered scarecrows which used to startle his timid predecessors as they ventured along the strange paths of export. He no longer turns back at vague warnings regarding "slipshod American packing," "inadequate credits," "inexperienced export technique," or "inferior foreign trade financing."

"These threadbare bugaboos have been most effectively dispelled by the uninterrupted expansion of the overseas markets for our manufactures. Regardless of depreciated European currencies and low wages—in fact, partly because of the low standards of living which they imply—the intelligence and resourceful adaptability of the Ameri-

American manufacturers have proved ability to operate in foreign markets, says Julius Klein. Outlook bright for continued growth of business, especially in manufactured products.

DR. JULIUS KLEIN, director, Bureau of Foreign and Domestic Commerce, Department of Commerce, in an analysis of the 1925-1926 foreign trade of this country, has made some remarks concerning present foreign selling conditions of special significance to manufacturers of automotive products. The accompanying article gives his views in some detail. Here are a few outstanding statements:

* * *

"The American manufacturer has evidently disposed of sundry tattered scarecrows which used to startle his timid predecessors as they ventured along the strange paths of export."

* * *

"Far from menacing the future of our manufactured exports, there is absolutely no question but that the recovery of Europe implies several vital economic elements in favor of our trade in fabricated wares."

* * *

"Many overseas markets have vast possibilities for the expansion of their purchasing power, with consequent increasing demand for the latest manufactured specialties."

* * *

"No sudden new outburst of factory production in importing or competing countries is, in the nature of things, to be expected."

* * *

"During each of the last four fiscal years a large increase has appeared in the exports of finished manufactures."

* * *

"The old export predominance of a few concentrated factory centers in the middle Atlantic and Northeastern States is no longer in evidence."

can manufacturer, backed by a firm policy as to quality in goods and services as against cut prices, have made a place overseas for American fabricated wares which bids fair to continue its steady growth.



"The rapidity of this progress in our manufactured exports should certainly not stimulate any smug complacency on our part. Success in foreign trade has always been contingent upon resourceful vigilance and with the continued economic uncertainties of Europe and in view of their far-flung reactions, this is emphatically the time for alert watchfulness on the part of our merchants and manufacturers.

Other Countries Gaining

"Nor can it be said that we are simply filling the vacancy left by the continued absence of European wares from certain overseas markets. Our leading European rivals are making rapid strides in the recovery of their overseas trade and an analysis of these figures for 1925-26 will show that there is comparatively little in our progress which is likely to impede their own.

"Far from menacing the future of our manufactured exports there is absolutely no question but that the recovery of Europe implies several vital economic elements in favor of our trade in fabricated wares. A careful analysis of the experience of our exports of these lines during the last six years in certain selected markets in the Far East and Latin America brings out clearly the fact that the expansion of these particular outlets varies directly with the growth of the European demand for raw materials produced in those countries.

"For example, our sales of automobiles in the Argentine, which in 1925 amounted to \$30,057,958, have been directly stimulated by the steady recovery of European demand for Argentine meat, wool and cereals.

"Many of these overseas markets have vast possibilities for the expansion of their purchasing power, with consequent increasing demand for the latest manufactured specialties. That expansion assures room for any traders from either side of the Atlantic who are in a position to meet satisfactorily these new needs. International trade in manufactures today by no means involves the old pre-war conflict of extermination between competitors.

A Stable Business

"The natural characteristic of exportation of manufactured goods as contrasted with raw materials is steadiness. Except when at rare intervals some wholly abnormal event at home or abroad interferes, sudden ups and downs are unlikely. Exports of products of the soil—raw materials and foodstuffs—often vary sharply as the result of changes in crop production, not only in the exporting country but in foreign importing countries and in competing export countries.

"Production of manufactured goods is in very great measure subject to human control and a country with a large manufacturing industry is always in a position to meet the demands of foreign consumers.

"At the same time those demands under normal con-

ditions are quite steady. No sudden new outburst of factory production in importing or competing countries is, in the nature of things, to be expected. A farsighted, well developed export program comprising carefully selected and diversified outlets can readily be readjusted to meet any momentary lull in a given market, due to some local depression, and can take up the slack elsewhere. Moreover the natural tendency of exports of finished manufactures is to grow. With the gradual improvement of living standards the world demand for them steadily rises unless some world catastrophe supervenes. It grows much faster than the demand for raw materials and more particularly foodstuffs.

"The aggregate value of all our domestic exports, other than finished manufactures, fell from \$3,108,000,000 in 1924-1925 to \$2,716,000,000 in 1925-1926, or by 12½ per cent. This was not due, of course, to any change of an enduring character in our ability to market foodstuffs and raw materials abroad. It reflected chiefly an abnormally poor yield of wheat and rye, and a marked decline in the world price of cotton. All the same this sharp fall would have had a rather serious effect upon our international business relations had it not been in large measure counterbalanced by the increase of 16 per cent in exports of finished manufactures. As it was, our total exports showed a decline of only 2½ per cent.

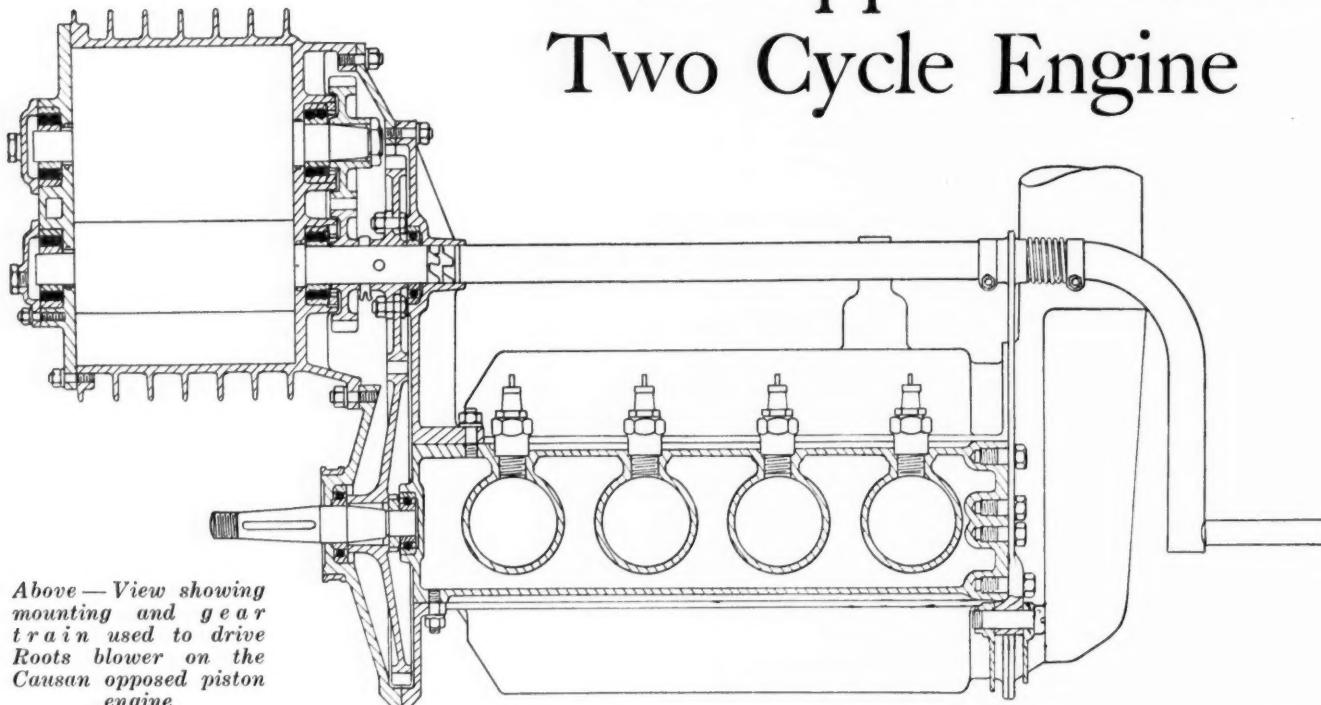
Each Year Shows Growth

"Going back further we find that during each of the last four fiscal years a large increase has appeared in the exports of finished manufactures. Exports of many important classes of manufactures were from two to nine times as great last year as in 1921-1922. The increase in exports of agricultural machinery as a group was no less than 343 per cent, and the item of tractors gained more than 800 per cent. Exports of automobiles, parts and accessories were more than four times as great last year as four years before and the increase for motor trucks alone was more than 600 per cent. Exports of cash registers, adding and calculating machines and related instruments nearly quadrupled.

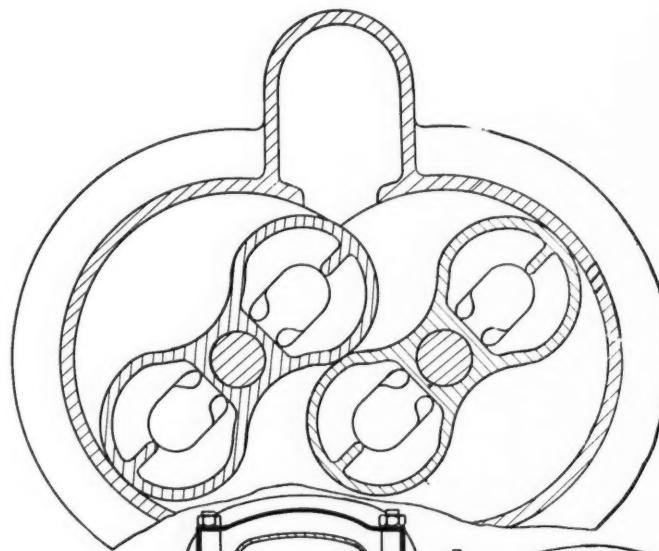
"The old export predominance of a few concentrated factory centers in the middle Atlantic and northeastern states is no longer in evidence. There is a steadily increasing percentage of many of these export items from other sections."

A RECENT census of commercial vehicles in use in the Irish Free State gave the following results: Taxicabs and vehicles for hire, 8208; commercial vehicles, 5144; vehicles in Government services, 1215; road tractors, 87 and farm tractors, 47.

Causan Opposed Piston Two Cycle Engine

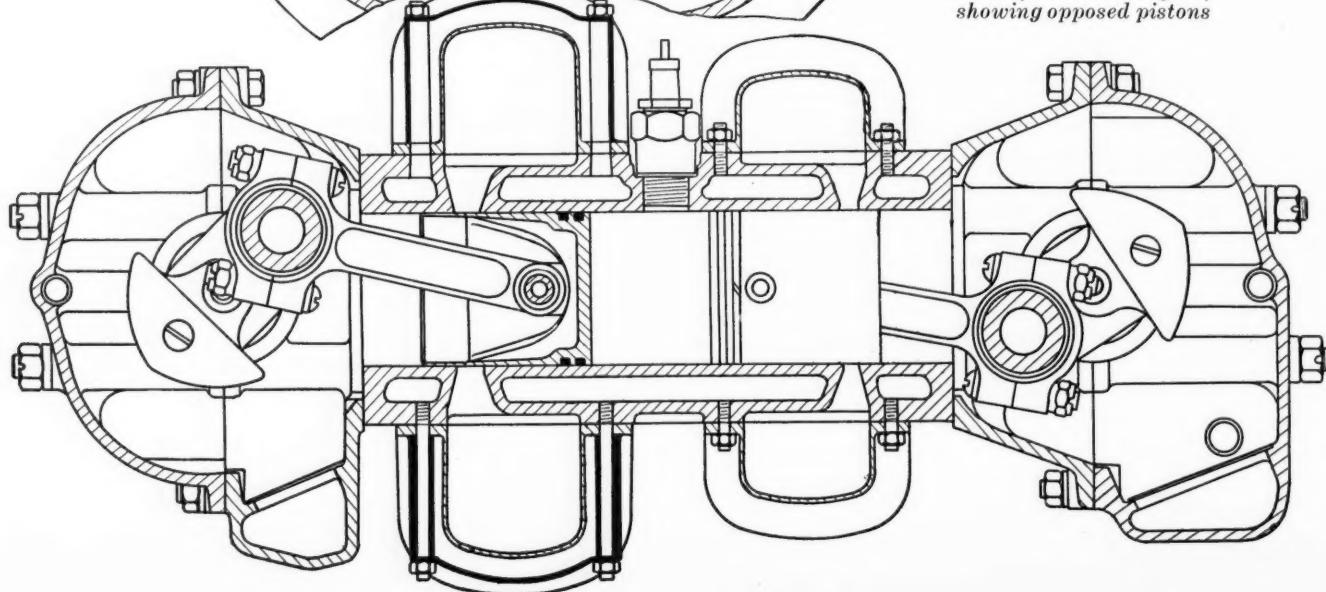


Above—View showing mounting and gear train used to drive Roots blower on the Causan opposed piston engine



Left—Section through Roots type blower used on Causan engine

Below—Transverse section of Causan engine, showing opposed pistons



IN our issue of July 15, page 89, we discussed some of the recent European engine developments and referred to an opposed piston, two-cycle supercharged powerplant which Engineer Causan had designed and built in France. In the meantime we have received several interesting drawings of this engine which are reproduced herewith. Bore and stroke is 60 by 66 mm. and 136.5 hp. is developed at 4400 r.p.m.

Just Among Ourselves

A Comparison of Export Figures

AN interesting commentary on the rate of growth of older and newer transportation agencies during the last few years is given in the export figures for the year 1925-1926 just published by the Bureau of Foreign and Domestic Commerce. Exports of engines, locomotives, waterwheels, etc., the Bureau shows, were 12.9 per cent less in 1925-1926 than in 1921-1922. Comparison of the same two fiscal years for some important automotive products show: Passenger cars, 412.8 per cent gain; motor trucks, 612.5 per cent gain; motorcycles, 68.2 per cent gain; tractors, 827.8 per cent gain. Specific and temporary conditions may be responsible for the decline in the particular phase of the industrial machinery exports mentioned, but there can be no doubt about the continued advance of automotive products in overseas markets.

* * *

"Test Your Tires Day" is Suggested.

IN the past we have had Apple Weeks, Prune Weeks, Fire Prevention Weeks, and weeks set aside for the glorification of so many other things that a writer was constrained to suggest not long ago the celebration of a Mind-Your-Own-Business Week, just to give everybody a chance to do as they pleased. Then the raisin industry got into the public eye by appropriating every Wednesday as Raisin Bread Day and now we notice that a tire gage manufacturer is advertising Friday as Test Your Tires Day. We think this last is perhaps the most sensible yet. If the manufacturer can get every car owner to test his tire pressures regularly once a week he will be rendering the owners a distinct service. Of course the ultimate aim is to sell tire gages, but the advantage of the plan

is that it works both ways, for as more people are induced to buy and use gages, tire economy will increase and the car-owning public will benefit accordingly. And Friday is the logical time to get the car in ship-shape for the week-end.

* * *

Automobile Increases Merchant's Business

YEAR in and year out the automobile goes on building towns, increasing merchants' business and making people happier and healthier. From a little town out West comes some more specific evidence of the business-building propensities of the motor car in the form of a statement by a small town merchant. He says: "Every dollar of profit in my business in the last five years is directly traceable to the automobile. The increased cost of doing business would have wrecked my business if I had not been able to increase my volume. Home-town business just about pays my overhead and operating expenses. Good roads, the automobile, rural bus lines and rural truck deliveries have doubled and trebled my out-of-town business. The trade area of this town of 15,000 inhabitants has been extended 30 miles by the automobile. So, of course, I'm for it." And so it goes year in and year out.

* * *

More Automobiles, Fewer Punctures

"TIRES," a veteran motorist told us the other day, "wear longer and suffer fewer punctures at present as compared with five or ten years ago, mainly for three reasons: First, they are more durably constructed; second, we have better roads to drive on, and third, nails, bits of glass, etc., on the highways have not increased as rapidly as the number of motor vehicles, with the result that there are now fewer puncture

hazards per car than formerly and we have less tire trouble from this source." That's pretty close figuring and undoubtedly he's right. At any rate we'll take his word for it.

* * *

Interest in S. A. E. Sectional Activities

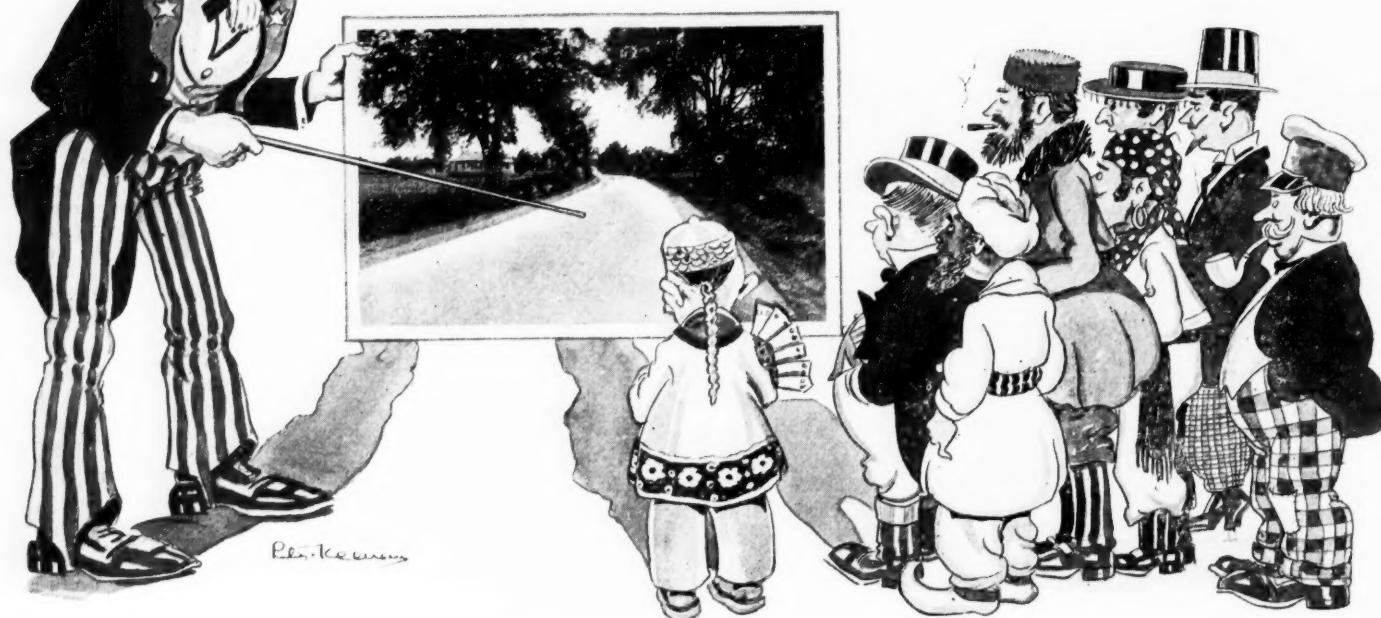
AS the idea of district sales meetings and sectional conference is growing in favor in the automobile merchandising field, so the interest in sectional gatherings and discussion is increasing among the engineers of the industry. An item from the Society of Automotive Engineers says that membership in S. A. E. sections has increased 21 per cent over a year ago; the Society now has thirteen sections with a total membership of 2819, as against 11 sections with membership of 2329 a year ago. Half the members of the Society now belong to local sections. These figures indicate a real gain in section activity and interest, because the membership of the Society as a whole has fluctuated only slightly in the period covered by the data.

* * *

Variation in Appeal of Color Combinations

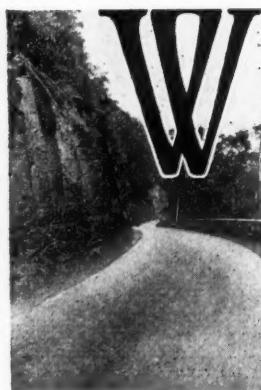
BRIGHT colors have become an established part of automobile bodies today. Some color combinations seem terrible to the average eye, some appeal favorably for a short time but become unattractive as they are seen frequently, while others look good at once and gain in appeal as they are noticed oftener. Perhaps an artist could analyze the reasons for the permanency or lack of permanency in appeal of various combinations. And perhaps more than a few automobile companies will be paying artists to do just that thing or something akin to it within the next few years.—N. G. S.

U. S. Exerting World-



By Roy D. Chapin

*Chairman Highway Committee
National Automobile Chamber of Commerce*



WITHIN the past twelve months, world highway development has definitely passed from the stage of debate to one of action.

More than \$550,000,000 has been voted in this period by nations exclusive of the United States for major highway projects and if to these be added the cumulative sums expended for upkeep by other governments and their myriad sub-divisions, it is probable that the total will reach somewhere around \$800,000,000.

The major items as collected by foreign representatives of the Department of Commerce may be summarized as follows:

Cuba	\$120,000,000
Mexico	3,000,000
Salvador	12,000,000
Australia	100,000,000
Colombia	13,000,000
France	11,400,000
Taiwan, Japan	6,000,000
Netherlands	120,000,000
Spain	75,000,000
Great Britain	85,000,000
Uruguay *	18,000,000
 Total	 \$555,400,000

*Unofficial estimate of part of \$30,000,000 loan which will be used for highways.

The significant fact of the survey made by the Depart-

ment rests not so much in the amounts, large as they are, but in the apparently universal recognition of the essential part played by the motor and the highway in world movement of goods and persons.

Thus, while the table does not show it, the data back of it discloses the fact that from Tierra del Fuego to the northern reaches of Canada, from the Cape of Good Hope to the Scandinavian countries, wherever men have their habitations, there is an urgent demand for highway transportation and a consequent realization that roads must be built to carry the new and growing traffic.

Everywhere we read of new regions opened to trade and settlement by use of the automobile, truck and bus. The picturesque but slowly moving bullock is giving way to the blast of the motor horn. The llama of the Andes, the camel of the desert, the dog of the Arctic wastes, no longer plod their arduous trail alone. Slowly but surely the motor vehicle is penetrating into the remote places of the earth, breaking the way for modern roads and modern methods of travel.

Vast Market Possibilities

To the man interested in export markets, this development opens up new and fascinating possibilities of a future interchange of commodities far beyond anything of the past.

To the student of sociology it presents a picture of changed living conditions, particularly significant to those who have seen the vast influences exerted upon life in the United States.

To the political observer it must connote a new understanding between people as the ways of communication and of social intercourse are made easier, together with a large new responsibility for the public officials who must

Wide Influence on Highway Development

Foreign countries in past year have voted to spend over \$550,000,000 for new roads to handle motor traffic.

look after financial details and direct the development.

Years will be necessary for a full fruition of the program which the nations of the world are just now beginning. Thousands of men must be trained in the economic and engineering phases of highway transportation and endowed with a sense of their public duty before the task can be accomplished. The material costs will be large but the benefits measured as we have measured them here, from every viewpoint, will be many times larger.

In this development the United States holds a unique position.

The rapidity with which the people of our country adopted the motor car as their instrument in individual transportation forced our public officials into a program of highway expansion without precedent in the world's history.

Almost overnight an overhauling and remodeling of a wagon engineered system became urgently necessary and with the task came a thousand and one problems of construction, maintenance and operation, not easily solved at best, not always correctly solved at the outset and not always completely solved yet.

Through trial and error, by rule of thumb and expedient, however, the highway builders built both policies and roads as they went along. The integrity and essential soundness of T. H. MacDonald and his associates in the U. S. Bureau of Public Roads and the American Association of State Highway Officials, have brought to them the full cooperation of the leaders in industry, agriculture and Government and through these combined efforts great progress has been made.

Today we stand four square upon a program of highway development destined to meet the needs of future as well as of present day traffic and while the actual work is still far from completed we have made tremendous strides forward toward a completed system of national, state and country roads.

Because of this progress, the United States is today a magnet which is drawing students of all phases of the highway subject from all parts of the world.

The best way to avoid mistakes is to draw upon the experience of others. That this fact has been generally recognized in the highway field is evidenced by the amazing number of inquiries constantly being received here covering every phase of the development.

What are the best methods of finance? How do you regulate traffic? Can you train highway engineers and contractors to do the job? What do different types of road cost? Which roads are best adapted to particular

types of traffic? What are the economic effects of road development?

These are but a few of the thousand and one basic and penetrating inquiries coming in from day to day and it must be evident that according to the answers which are made, the United States will be judged.

At the same time, it is fully recognized here that we do not possess all of the information of the world on this subject. In England, for example, store door delivery has progressed already to a degree unknown here. Scientists everywhere are studying questions of construction, design, maintenance and regulation and our highway leaders are as anxious to obtain the fruits of the experience of others as they are ready to make available all of the data which they have.

So it appears that world conferences on highway development are of the utmost importance from a world viewpoint if this new major development in transportation is to proceed rapidly, economically and efficiently.

It was the realization of these facts which led the various groups interested to set up a Highway Education Board under Government leadership some years ago.

As this board found its place and our relations with Latin America were crystallized from a highway point of view through the visit of Latin engineers to this country in 1924, our

Government and private groups were glad to accept the invitation of the Latins to join in the formation of a Pan-American Confederation for Highway Education.

Later Congress authorized the president to send an official delegation to participate in the First Pan-American Congress of Highways at Buenos Aires last year and in consequence leading highway engineers and economists from the United States sat in with Latin officials in Argentina and studied traffic and road conditions in many countries as they went along.

The resolutions passed at Buenos Aires provided for a continuation of these sessions at Brazil in 1927 and officials of all the countries of the Pan-American Union are all keenly interested in seeing these interchanges of viewpoint and fact continued.

While this movement has been going along and in fact many years prior to its inception, the Permanent Association of International Road Congresses, organized in 1908, has been functioning with headquarters at Paris, France. Most of the leading countries of the world have taken membership in this body and sessions held every three years have served to provide a world clearing house for



Roy D. Chapin

all matters which are of interest to highway builders.

The World War caused a temporary discontinuance in this activity but sessions were renewed at Seville, Spain, in 1923, and another will be held this year at Milan, Italy, September 6 to 13.

Before the Spanish Congress was held an effort was made here to secure congressional action directing our Secretary of Agriculture to take memberships in the Congress on behalf of the United States. Despite the recommendation of the President, concurred in by the Secretaries of State and Agriculture, and despite unanimous favorable consideration by the Senate and by the responsible committee in the House, a parliamentary situation which intervened at the last moment of the session prevented action. Consequently our appearance was private in character.

This year, however, with similar recommendations made by administrative leaders, Congress acted favorably and consequently the United States will be represented by an official delegation for the first time when the Milan sessions convene.

Nor is it any secret to say that, with our adhesion, which in the language of the act is continuous, it is the hope of those interested here that the next session of the international body may be brought to this country.

With these two international projects as a background, it is generally felt here that the time has come when the Highway Education Board should be reshaped and its program expanded in order to permit of its functioning as

a point of contact between the United States and the other nations of the world in matters relating to highways.

Accordingly steps are now being taken to broaden out this body in order to bring in all of the Government departments which have to do with international relations, just as in the past there have been members who are concerned with domestic highway matters.

This accomplished, it is believed that through the quasi-official position which will be obtained by leaving the Government officials in general control of policies, but bringing in private groups to aid in financing the undertaking, a thoroughly rational and public spirit direction can be given to our cooperation with other groups interested in sound highway development the world over.

Measured in mere terms of dollars and cents, world highways constitute possibly the largest single peace time endeavor now facing the nations of the globe. This movement can be wisely and prudently joined in by our country only as we recognize the need for seeing to it that all of the facts and the best impartial judgment we can give is made available to those who seek information and men from us.

This is the motive which has actuated the members of the Highway Education Board and the executive committee of the Pan-American Confederation for Highway Education in the splendid work already done and it is the explanation also of our keen interest here and desire to cooperate in all such international conferences as the forthcoming sessions at Milan, Italy.

Nation's Foremost Highway and Traffic Experts Prepare Papers for Road Congress

*American views will be fully expounded at Milan meeting.
Seven official delegates include two N.A.C.C. men.*

THE program of subjects to be discussed at the Fifth International Road Congress by representative engineers of all participating countries includes the construction and upkeep of roads of various types, the standardization of tests for the acceptance of materials used in road construction, the recording and use of traffic censuses, the regulation of traffic in cities and the solution of problems of traffic congestion, and the question of special roads for motor traffic.

Arrangements for the participation of American engineers in the program have been made by Euston B. Fletcher, consulting engineer of the United States Bureau of Public Roads. Through Mr. Fletcher's efforts, papers on each of the subjects have been prepared in collaboration by a number of the most prominent American engineers and traffic experts. Those who have thus contributed to the expression of the American point of view on the various subjects are:

Concrete Roads—Clifford Olden, consulting engineer, Chicago, Ill.; J. Shirley Bright, construction engineer, United States Bureau of Public Roads, San Francisco, Cal.; Raymond W. Coburn, construction engineer, State Highway Department, Boston, Mass.; Charles R. Ege, manager highways bureau, Portland Cement Association, Chicago, Ill.; Herbert J. Kuelling, construction engineer, State Highway Department, Madison, Wis.; Robert M. Morton, State highway engineer, Sacramento, Cal.; Frank T. Sheets, chief highway engineer, State Department of Public Works and Buildings, Division of Highways, Spring-



Thomas H. MacDonald, chief of U. S. Bureau of Public Roads, who goes to Milan Road Congress as a delegate

field, Ill.; Leroy C. Smith, chief engineer, Wayne County Highway Commission, Detroit, Mich.; Charles M. Upham, formerly chief engineer, State Highway Department, Raleigh, N. C.

Roads Using Bitumen and Asphalt—Charles S. Pope, chief construction engineer, State highway department, Sacramento, Cal.; R. Keith Compton, director of public works, Richmond, Va.; W. Herbert Fulweiler, chemical engineer, United Gas Improvement Co., Philadelphia, Pa.; Christian P. Jensen, county surveyor, Fresno, Cal.; William H. Kershaw, manager, asphalt department, the Texas Co., New York City; Ralph E. Myers, chemist, New York State Highway Department, Albany, N. Y.; Philip P. Sharbles, consulting highway engineer, Redondo Beach, Cal.; Henry G. Shirley, chairman State Highway Commission, Richmond, Va.; Francis P. Smith, consulting highway engineer, New York City.

Standardization of Trials for Acceptance of Materials for Roads—Albert T. Goldbeck, formerly chief division of tests, U. S. Bureau of Public Roads, Washington, D. C.; Duff A. Abrams, engineer of materials research laboratory, Lewis Institute, Chicago, Ill.; Harold F. Clemmer, engi-

neer of materials, State Highway Department, Springfield, Ill.; Prevost Hubbard, chemical engineer, the Asphalt Association, New York City; Claude L. McKesson, research engineer, California Highway Commission, Sacramento, Cal.; Horatio S. Mattimore, engineer of tests, State Highway Department, Harrisburg, Pa.

Census of Circulation—Henry R. Trumbower, economist, U. S. Bureau of Public Roads, Washington, D. C.; Thomas R. Agg, professor of highway economics, Iowa

H. H. Rice, well-known automotive executive, is among those named by President Coolidge to represent the United States at International Road Congress



State College, Ames, Iowa; J. Rowland Bibbins, consultant in transportation, Cosmos Club, Washington, D. C.; Arthur H. Blanchard, professor of highway engineering and highway transportation, University of Michigan, Ann Arbor, Mich.; William P. Eno, Eno Foundation, Washington, D. C.; Ernest P. Goodrich, consulting engineer, New York City; Laurence I. Hews, deputy chief engineer, U. S. Bureau of Public Roads, San Francisco, Cal.; John N. Mackall, chairman and chief engineer, State Roads Commission, Baltimore, Md.; William A. Van Duzer, equipment and transport engineer, State Highway Department, Harrisburg, Pa.

Traffic Regulation

Development and Organization of Towns in the Interest of Traffic—Frederick L. Olmstead, landscape architect, Brookline, Mass.; Charles B. Ball, chief sanitary inspector, department of health, Chicago, Ill.; Harland Bartholomew, engineer, city planning commission, St. Louis, Mo.; Frederic A. Delano, Washington, D. C.; Frederic H. Fay, chairman Planning Board of the City of Boston; Morris Knowles, consulting engineer, Pittsburgh, Pa.; Arthur A. Shurtleff, consultant, Metropolitan Planning Division, Commonwealth of Massachusetts and Boston Park Department, Boston, Mass.; Arthur S. Tuttle, chief engineer, Board of Estimate and Apportionment, New York City; George S. Webster, consulting engineer, Philadelphia, Pa.; E. P. Goodrich, New York City.

Roads Specially Reserved for Motor Cars—Thomas H. MacDonald, chief, U. S. Bureau of Public Roads, Washington, D. C.; John A. Macdonald, State highway commissioner, Hartford, Conn.; W. G. Sloan, State highway engineer, Trenton, N. J.

Acting on the joint recommendation of the Secretaries of State, Agriculture and Commerce, President Coolidge has appointed as official delegates to the Congress: Thomas H. MacDonald, chief, United States Bureau of Public Roads; Paul D. Sargent, chief engineer, State Highway Commission of Maine; John N. Mackall, chairman, State Roads Commission of Maryland; H. C. MacLean, commercial attache, Department of Commerce at Rome; H. H. Kelly, assistant trade commissioner, Department of Commerce at Paris, and H. H. Rice, and Pyke Johnson, of the National Automobile Chamber of Commerce.

The delegation sailed from New York yesterday, Aug. 25, on the Steamship President Harding, and will arrive at Milan in time to take part in all meetings of the Congress which will be opened on September 6 and continue at Milan for six days, closing in Rome on the following day, September 13.

Change in Air Mail Policy

POSTMASTER General New in a recent statement said that the time is approaching when private contractors will be asked to name the terms on which they will take over the business of carrying the trans-Continental air mail. "I have said as often as I have either written or spoken on the subject that the Government should turn the business over to private capital," said Mr. New, "but when the continuous trans-Continental service was started, and in fact not until the present, was there any private capital that either cared enough or knew enough about it to give it a moment's consideration. There are now several concerns that are at least approaching a condition to permit of their taking it over and are manifesting a willingness to do so. This is just exactly what the Post Office Department has had in mind in developing and carrying forward the air mail. It has been demonstrated to all who might be interested that communication by air between distant points was possible both by day and by night with dependable regularity and marvelously fast time.

"Contractors are learning that to be successful they must carry passengers and express and it is not going to be long until someone puts in a full service of that character.

"It is not true that all the contract air mail lines are losing money but it is true that most of them are, and most of them must so long as they depend upon mail only.

"Our own night service between New York and Chicago is better than paying operating expenses and the business is growing. The trans-Continental connection from Salt Lake with Los Angeles is on a paying basis but it carries passengers; so is the line between Jacksonville, Tampa and Miami, which also carries passengers. Mr. Mitten's line between Philadelphia and Washington carries almost its full capacity of passengers each way every day. Two or three of the contractors on our best lines are placing orders for passenger-carrying ships. They will all have to come to it and most of them will."

"The line between New York and San Francisco has been in operation day and night for over two years, since July 1, 1924; the extension from Dallas to Fort Worth since the 12th of May; that connecting the trans-Continental route with Los Angeles at Salt Lake City since April 17.

"It is my very sincere belief that within a comparatively short time a person desiring to do so may leave New York by a ship carrying the air mail after the close of business hours on Saturday and be in San Francisco or Los Angeles for the opening of business Monday morning.

"I feel that the United States is committed to the permanent continuance of the air service between the two coasts and whenever it does get ready to turn the business over to private parties it will insist upon a contract satisfactorily guaranteeing that the service will be permanently maintained."

ON May 1, 1926, there were in service in Hungary 9159 private passenger cars, 1525 trucks and 588 public vehicles. Two-thirds of the total number were in use in Budapest. Of the commercial vehicles, 24.7 per cent were of American manufacture, 21.9 per cent German and 18.7 per cent Hungarian.

Bus Brakes --

Design and Maintenance Are Holding Attention of Manufacturers and Operators

By K. W. Stillman

HOW can a vehicle weighing some ten tons, running on 20 in. diameter wheels at speeds up to 35 m.p.h. be brought to fairly abrupt stops several hundred times daily without generating such heat as to cause destruction of the tires or without necessitating too frequent replacement of brake linings and adjustment of brakes? This is a question which has been bothering manufacturers of motorcoaches for a long time.

In a survey of representative bus operators throughout the country conducted by *Automotive Industries* nearly 90 per cent of those queried gave brakes as the most troublesome part of the modern bus. The causes of complaint were many. Possibly the most common one was the too rapid wear of brake linings which makes it necessary for some operators, on particularly severe routes, to reline their brakes almost daily in order to be sure of safe operation.

Drums Giving Trouble

Some other operators find that although their linings appear to wear well the brake drums score very quickly and must be replaced or repaired more often than they think should be necessary under ordinary conditions. Nearly all operators experience some trouble with the actual stopping power of their braking systems. With brand new linings and perfectly adjusted brakes little trouble is experienced in bringing the bus to a stop quickly but as soon as a little wear takes place—often that obtained during a single day's service—the efficiency of the system is greatly impaired. In other words they say that the factor of safety it is possible to build into the brake designs under current limitations made by surrounding factors is too small; that to obtain efficient and entirely safe braking the system must be kept more nearly in perfect condition than is usually possible under operating conditions.

Still another complaint is to the effect that the driver is rarely able to apply the full braking pressure needed to bring a well loaded bus to a quick stop because the system is incapable of multiplying his effort sufficiently. This complaint applies naturally, to those buses which are equipped with manually operated brakes, but, of course, can be met by the use of a servo mechanism.

A final complaint is not against the effectiveness of the brakes but against their effect upon tire life. Operators are learning that tires do not stand up well when placed in close proximity to the brake drums. Some operators have had the sad experience of seeing a brand new heavy duty tire utterly destroyed after only a few hundred miles

of service. Tires constitute no inconsiderable part of the operating expenses of a bus so that this particular complaint is made with great earnestness.

All of these complaints are probably justified to some extent and the manufacturers have been spending much time and money in order to improve conditions. The whole question of motorcoach brake systems is an immensely difficult one, however, and it can not be stated definitely that a sure and certain solution for any of the ailments has been found yet.

The fundamental cause of all the trouble is the overwhelming desire on the part of the bus riding public for low level vehicles and the greater stability and comfort provided by such construction. In catering to this demand buses have been lowered until at the present time the diameters of bus wheels average about 20 in. or almost the same as those of a passenger car. The problem is evident. In a vehicle weighing from six to eight times as much as a passenger car, stopping much oftener than any passenger car is stopped and from speeds which in many instances are equivalent to passenger cars speeds, there is no more space for brakes available than on a passenger car.

To stop a vehicle under these conditions calls for very high unit pressures at the brakes. As a result of these high unit pressures frictional forces on the brake linings and drums are very high, a great amount of heat so generated is not dissipated and trouble follows.

The obvious remedy for the brake troubles, then, is to increase wheel diameters. This would be so contrary to public desire, however, that it is reasonably sure it will be used only as a last resort by most bus makers although one or two have already increased their wheel sizes to 22 in. without experiencing any great amount of public disapproval.

Frequent Relinings

Of the various troubles which arise from the braking system, that of rapid wear of linings is probably uppermost in the mind of the operator because it is most often brought to his attention. Many operators feel that the relining job occurs more often than should be necessary. They, of course, are basing their belief upon usual passenger car and truck practice which may be setting too high a standard for buses to meet, but that the present condition can be improved is almost certain.

Since nearly all of the brakes used on buses have fabric linings the brake lining manufacturers were interviewed in order to discover what was the cause of the rapid lining wear. The manufacturers' association as well as a num-

ber of individual manufacturers are agreed that excessive wear was due indirectly to the use of relatively soft brake drums.

It is their contention that brake linings could be made just as hard and resistant to wear as could be desired but there is no object in doing it while brake drums with as low a carbon content as is generally employed now continue to be used. During the operation of a brake something must take the wear and operators are in accord that it is better that the lining wear than that the drums become scored. For this reason the lining makers have been limited to the production of a type of lining which would give as good service as possible but which would not score the drum.

A Higher Carbon Content

The usual carbon content of brake drums is between .10 and .20. According to lining manufacturers this should be increased to a minimum of .45. If this were done linings much more resistant to wear could be employed satisfactorily and maintenance and repair work cut down considerably. Some few bus makers have adopted high carbon drums and their experience has been quite satisfactory. There is a cost element in making this change which may deter others.

Although this matter appears to be the main cause for the prevailing dissatisfaction with brake wear there are other factors which, no doubt, have considerable influence. Proper application of the lining plays a big part in determining its effective life. Unless it is applied evenly and fastened securely it will develop high spots which, of course, will quickly give way under service. Out-of-round brake drums are frequent sources of trouble and with the very small clearances which must be maintained in order that the energy of the driver may be multiplied sufficiently to set the brakes properly it is essential that the drums be true as to contour and the shoes and lining carefully adjusted to fit.

Application of the lining in segments is a fairly recent method which has a beneficial effect upon lining wear. Some makers claim that when the lining is put on all in one piece it has a tendency to stretch between the rivets and so develop high spots. Others state that the main advantage to be obtained by segments is that an air gap is thus provided so that some of the heat can be dissipated. Whichever is the true reason, it has been fairly well authenticated that brake lining applied in relatively short sections wears considerably better than the same lining applied all in one piece.

Advocates of all metal brakes for buses are appearing on the scene. One objection to widespread adoption of this type of brake lies in the fact that power operation is required with any so far disclosed since it is impracticable to obtain manually the pressures necessary to work metal-to-metal brakes. Although it is possible that power operation may become standard in the future the added cost of such installation will deter many bus makers from adopting it so long as other means can be made to give reasonable satisfaction.

Even with power operation, however, there still remain some objections to metal brakes. The main one is that considerable practice is required to stop a vehicle smoothly. The sliding friction between the metallic surfaces is enormous so that when pressure is exerted to bring the shoe and the drum together they almost lock. If the pressure is continued the bus will be brought to an abrupt stop which would not only be very uncomfortable but rather dangerous to the passengers as well as to following vehicles. The pressure must be released momentarily and then reapplied and released again, continuing until the bus is finally brought to a stop.

The advantages of metal brakes include a coefficient of friction which is very little affected by heat, moisture, oil or other substances and slightly improved heat conductivity conditions.

The second most important difficulty caused by the braking system is too rapid destruction of tires. In fact, it is possible that if the truth were known this factor may be of considerable more economic importance to bus operators than that of lining wear but because its effects are not so easily discernible and occur with less frequency tire destruction does not appear to loom quite so large in the minds of the operators.

The question has troubled tire makers, however, since it has given rise to many complaints about the wearing qualities of their products and the tire makers in many cases have called upon the wheel makers to help solve the problem. In spite of the great amount of investigation which these two agencies together with bus and brake makers have made there is still no sure remedy available. All that is definitely known is that so much heat is generated by the brakes that it is having a very destructive effect upon the tires—some of them being utterly destroyed after a few hundred miles of service.

The reason for the condition is the same as that given for rapid lining wear—small wheel diameters. In order to provide enough braking area to stop the bus it is necessary to utilize practically the entire space afforded by a 20 in. wheel so that there is very little space left between the brake drum and the rim of the tire. With the high unit pressures used in bus braking the heat developed is considerable and the frequency of stops does not permit much cooling to take place. The result is that temperatures are obtained in the brake drums and are transmitted to the rim and tires which are often above the vulcanizing point of rubber, and, of course, the tire was never built to withstand such treatment and it rapidly succumbs.

So long as the braking system remains of the same general design as is now used there appears to be only two sure solutions to this particular part of the problem and neither of them is practicable. The wheels can be increased in size or the brakes reduced. Adoption of the first expedient is unlikely while there is any hope of other methods succeeding because, as stated before, low level buses are very strongly in the public favor and few bus makers care to go contrary to such a pronounced preference. The other possibility can be used if four wheel brakes are adopted but with rear wheel brakes only there is no more area provided with present practices than is necessary to assure safe operation.

Dissipating the Heat

All sorts of schemes have been tried to dissipate the heat before it could reach the tires in any quantity but none of them has been eminently successful. An obstacle to accomplishing this is that opinion is divided as to what form of heat is most destructive to the tires. Some investigators, apparently, are of the opinion that convected heat is the main source of trouble and they suggest the use of air circulation either artificial or obtained by provision of louvres and baffles in the wheel construction as a means of eliminating much of the trouble. Others state that convection has little to do with it but that radiant heat is the destructive force and they suggest baffles to deflect the heat.

The methods yet developed have not received unqualified commendation from the interested parties, so the investigations still continue. There is little doubt that a satisfactory solution will be found in time since this particular problem is certainly no more difficult than many which have been solved during the progress of the industry.

Rising Price of Kerosene May Boost Gasoline as Tractor Fuel

Difference in price of two fuels now slight. Number of tractors using gasoline has increased in recent years and indications are that trend will continue in future.

WHAT effect, if any, will the rising price of kerosene have on the tractor industry? Will it result eventually in the general substitution of gasoline for kerosene as a tractor fuel?

During the past few months the price of kerosene has been advancing rather steadily after having remained at a nearly constant level for a period of several years. Neither the actual price nor the comparatively slight increase is of great significance, but it may serve to focus the interest of tractor manufacturers on the probable future price of kerosene in relation to the price of gasoline.

What this relation is and what the margin of difference in price is likely to be are important factors in the choice of fuel and probably will decide whether future tractor models are equipped to operate upon both kerosene and gasoline or upon gasoline only.

In the early days of the tractor industry, equipping to operate on gasoline, kerosene or distillate rather than on gasoline alone was logical in view of the favorable price of the heavier fuel, but Fig. 1 shows a swing toward gasoline in recent years. In this figure the upper curve shows the per cent of agricultural tractor models equipped to operate on gasoline, kerosene or distillate. For any year, the difference between this figure and 100 gives the per cent equipped to operate on gasoline only. The lower curve shows the difference between the price of gasoline and kerosene expressed in per cent of the price of gasoline. The two curves show a close sympathy in trend, and the present slight price advantage of kerosene leads naturally to the question of the future advisability of discarding kerosene carburetors and induction systems and re-designing for operation on gasoline.

An additional condition which has a bearing on this problem is the fact that owing to the poor anti-knock characteristics of kerosene a lower compression ratio is required to obtain satisfactory operation than is required for gasoline. While designed primarily for agricultural purposes, the tractor has found wide applications in industry. In rural sections, kerosene is probably the favored fuel and used to a greater extent than gasoline, but where the tractor is used for industrial purposes, it is safe to say that comparatively few are operated on kerosene owing to the greater convenience of the gasoline supply. The proportion of tractors designed to operate ordinarily on kerosene but which are actually operating on gasoline is probably large. This situation indicates a considerable fuel waste.

From the standpoint of mechanical design the changes required to operate on gasoline present slight difficulties. In view of the inherent unfavorable characteristics of kerosene as a fuel for the conventional type of engine, it seems likely that, as a result of this and other factors which have been mentioned, the future will see a marked increase in the proportion of tractor models designed to operate solely on gasoline.

Before the advent of the automobile, kerosene was the mainstay of the oil refining industry, but with the rise of automotive transportation, the demand for gasoline soon exceeded that for kerosene and it has been rapidly relegated to a subordinate position. In 1900, the output of kerosene was approximately 55 per cent of the crude petroleum run to stills. In 1914, this proportion had dropped to 24 per cent and the ratio has continued to decrease until at the present time kerosene represents probably less than 8 per cent of refined petroleum products.

During the comparatively recent period when the future supply of crude petroleum was a matter of grave question, filling the demand for gasoline was considered of primary importance, and its production, therefore,

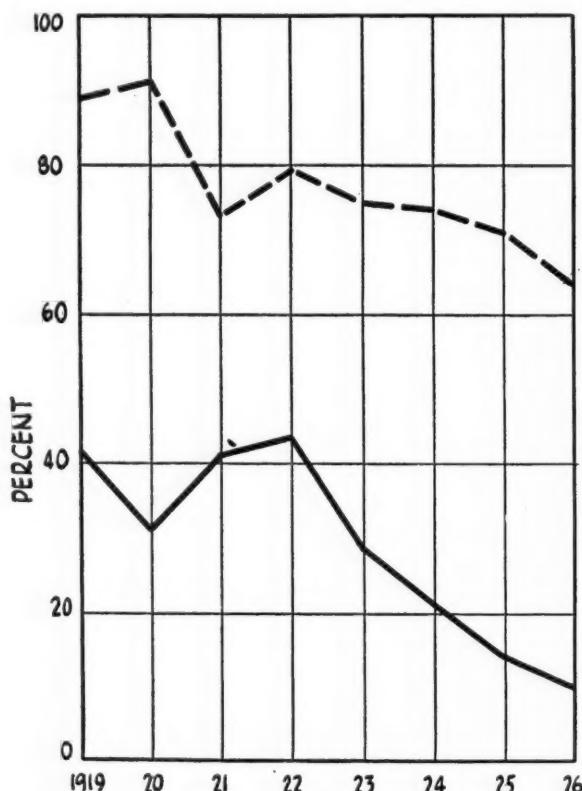


Fig. 1. Upper curve shows per cent of tractor models equipped to operate on gasoline, kerosene or distillate. For any year, the difference between this figure and 100 gives the per cent equipped to operate on gasoline only. Lower curve shows difference in price of gasoline and kerosene expressed in per cent of price of gasoline

took precedence over other petroleum products. This demanded the maximum production of natural gasoline, and in addition to the necessity of supplementing the supply with the "cracked" product of heavier fractions, tended to draw in the lighter ends of kerosene. Under these circumstances it was natural that gasoline

resorted to, the heavier fraction of kerosene goes into fuel oil. It is obvious, therefore, that the production of kerosene may now be subject to the vagaries of demand for fuel oil as well as gasoline.

The accompanying chart of "tank wagon" prices for gasoline (not including tax) and kerosene, shows the

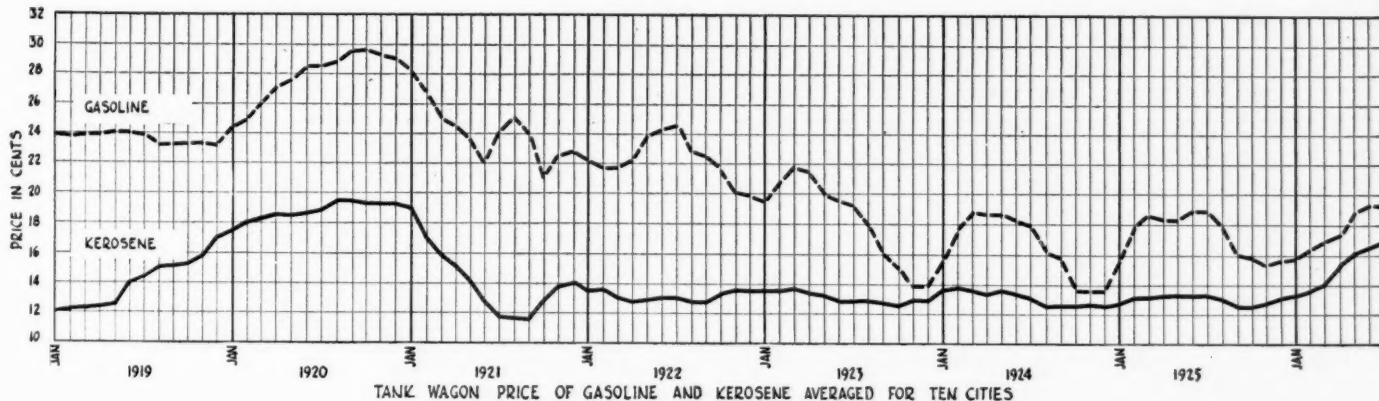


Fig. 2

was the controlling factor in the price of petroleum products. Since that time, the discovery of new fields has relieved the situation and assured the supply for an indefinite period.

About the same time that the fear of a shortage in the supply of crude oil was dissipated, oil burners for house heating became popular, and their increased use has created an immense demand for fuel oil, which has placed it in a nearly similar position of importance as a factor in the control of price. The significance of this situation lies in the fact that kerosene consists of the heavier fraction of gasoline and the lighter fraction of furnace oil. The increased effectiveness of fractionating methods, which have been developed recently, makes it possible to remove all but the last trace of gasoline from kerosene or crude. If complete fractionation is

price averaged for ten cities throughout the country (Fig. 2). A number of points are apparent immediately. The difference in price of the two fuels has been decreasing steadily, so that at present, the difference, even with the tax added to gasoline, is relatively small. To the end of 1921, the price fluctuation of kerosene followed the price fluctuation of gasoline in a general way. From that time until the latter part of 1925 it remained substantially constant with seasonal demand reflected to a small extent. Owing to factors which have been discussed, and others of an equally uncertain nature, prophesying the future relation between gasoline and kerosene would be decidedly difficult. The present relation may be a coincidence, but it seems safe to say that differences of the magnitude which have existed in the past are not likely to recur in the future.

New Bugatti Will be Sold Here—Price Will be \$20,000

REPORTS that either he or the Stutz company were identified with a project to introduce the Bugatti car into this country were denied by F. E. Moscovics, president of Stutz, who has just returned from a trip to Europe. He said, however, that he had agreed to lend his personal assistance in Ettore Bugatti's plans to introduce the new large-sized Bugatti car in America, and that Bugatti, whom he referred to as the "greatest automotive engineer in Europe" would represent the Stutz company in Paris.

The chassis of the new Bugatti will sell for about \$20,000 and it is expected that there will be limited market possibilities for the car here, he said.

Asked whether he had achieved the distinction of super-salesman through having sold a car to H. R. H. Prince Henry, Mr. Moscovics said that while he had spent an evening with Prince Henry and had taken him out in the new Stutz car, the possibility of selling an American car to a scion of the British ruling house was too remote to receive serious consideration. "British royalty necessarily must ride in British-made automobiles," Mr. Moscovics said. He added, however, that Prince Henry was an ardent admirer of the Stutz product.

Mr. Moscovics was extremely optimistic over prospects for the increased exportation of American cars to Europe

and announced that representatives had been appointed by him in Belgium, Holland, Sweden, Norway, Finland, Denmark, Switzerland, Spain, Portugal, Czechoslovakia and Austria. Col. Warwick Wright, manager of Warwick Wright, Ltd., whom he declared to be one of the most successful automotive merchants in England and who has 150 agencies, will represent the Stutz company in the British Isles henceforth, he announced. Col. Wright expects to sell 300 Stutz cars next season, Mr. Moscovics said.

Economic conditions are favorable for increased consumption of American cars throughout Europe, but particularly in Holland, Belgium and Spain, he said, while Germany affords a splendid market. A company is being formed to handle Stutz cars in Germany, with headquarters in Berlin, he stated.

TWO of the German air transport concerns, the Aero-Lloyd and the Junkers Luftverkehr, have been amalgamated. Operations will be begun within the near future, probably under the name of Aero-Union. The financial problems of the amalgamation have been solved with the assistance of large banks. It is very likely that the system of organization of the Aero-Lloyd will be adopted.

Two New Books Provide Complete Picture of Progress in Aviation

Aircraft Year Book for 1926 and Transport Aviation supplement each other and furnish complete information concerning the industry.

WITH the intense interest in commercial aviation which is coming into being with the establishment of commercial air routes in this country two very timely books have just been published, the combination of which give an excellent picture of the present conditions of commercial aviation in this country. One of these, the *Aircraft Year Book for 1926*, published by the Aeronautical Chamber of Commerce, is one of the series of books published annually by this organization. It gives a complete summary of all developments in the past year both here and abroad and is invaluable to students of commercial aviation as an analysis of what has been done already. The other, *Transport Aviation*, by Archibald Black, discusses the subject of commercial transport from the angle of the commercial operator and investor, the problems which they are facing and the methods of analyzing them. The books, while independently prepared, are practically supplementary to each other, *Transport Aviation* dealing with the analytical, and the *Year Book* with the empirical equation in commercial transportation.

Wide Interest Recognized

Mr. Black, recognizing that interest in aviation is not confined to those engaged in that business, has been careful to treat the whole problem of the establishment of commercial air lines from "the ground up." The first five chapters of the book are devoted to a general outline of the situation, treating of the coordination of air transport with other means of transportation, a summary of air transport in the United States and abroad, and the establishment of the factors which govern the developments of air routes. Before taking up the individual items affecting air transport, Mr. Black then devotes a chapter to the possibility of the airplane in transportation, regarding it as a common carrier from the investor's point of view, giving the capital required, estimated operating costs, dividends, etc., and taking into account mail, express and passenger service with reference to other established methods of transportation.

One of the most interesting chapters in this book is that on the influence of airplane design on operating costs, in which all the various influencing factors, such as number of engines, size, cruising radius, speed, climb and safety factor, are carefully analyzed. Mr. Black points out by calculation that the use of three engines in a ship provides

about the reserve required to provide climbing ability necessary for safe operation.

It is rather unfortunate from the point of view of present conditions that landing speed has not been given more prominence in this discussion. It is possible that this factor will in time become less important as the establishment of regular air routes will bring with them fields of sufficient size to make the question of minimum landing speed of less importance than at present. Mr. Black must have had this in mind as he assumed a minimum landing speed of 52 miles per hour in all his calculations, which is rather high considering the status of the average landing field of today.

Commercial Engine Design

Referring to aircraft engines for commercial use, Mr. Black points out that nearly all engines up to the present time have been designed for military use. A comparison or requirements in engines for military and commercial application, given by Mr. Black, show a considerable divergence. The necessity for careful selection of present day power plants for specific requirements is therefore emphasized. Mr. Black also points out that competition of modern high priced engines with war surplus stock is possible on the basis of uncertainty of getting parts and securing future supplies on the war surplus basis. The specific requirements and design of planes for passenger use or for freight and mail transportation are then gone into, emphasis being laid on the divergence of requirements both between these types themselves, and as between them and military craft.

Airways and Landing Fields

Airways and landing fields are covered in a separate chapter, and attention is called to the necessity the large operator has to face of making specific agreements with owners of property for the use of emergency fields when necessary. Some methods of achieving this are given. The proper design of landing fields with the various factors governing their location and construction such as accessibility, meteorological conditions, etc., are gone into. The necessary maintenance equipment which should be located at various types of fields are covered in another chapter. Regarding engine maintenance equipment, Mr. Black points out that a garage which is fully equipped for the overhaul of automobile engines would only have to add a few

minor tools to its equipment in order to handle airplane engine work. The cost of maintaining engines in airplanes is carefully gone into and all available data have been included, as such estimates of necessity can be based only upon practical experience.

The completeness with which this book goes into the problem of air transport is emphasized by the careful analysis of organization and personnel necessary in an air transport concern. With regard to investment and operating costs as established by previous experience, there is very little data which could be given. This subject is entirely too new in this country and European figures are not applicable here. Summary of costs of the air mail service and estimates based on a study of the problem are given in tabular form, however, and the factors influencing these figures enumerated. An interesting figure which Mr. Black has obtained by calculation, is that if all first class mail and this alone, were transported by airplane, the cost of such transportation would be less than 1.4c per average letter.

Reliability of Airplanes

The text matter of the book concludes with an analysis of the reliability of airplanes in commercial service, pointing out that performance should be practically 100 per cent in summer and at least 96 per cent in winter according to present obtainable data. These figures compare very well with other means of transportation. The appendix carries a number of tables of characteristics of typical American and British engines and commercial aircraft.

In the *Aircraft Year Book* the general picture of present day conditions in civilian aviation, obtained from *Transport Aviation*, is individualized. This year's issue begins with a summary of individual major accomplishments, such as the establishment of the various large transport companies, their organization, purpose and achievements up to the present time. The title of the first chapter gives the keynote of the whole book: "Aviation Recognized as a Business." Operating data on 290 aircraft operators aside from the large transport companies, are given by states. The total mileage of these operators, owning 676 planes, being nearly 5½ million miles.

Aircraft in agriculture, exploration and photography have separate chapters devoted to them. Regarding the first it was estimated that a saving of \$225,000,000 each year in cotton alone could be effected through the application of airplanes to crop dusting. The record of the forestry service shows that out of 421 patrols 217 new fires were discovered. Regarding aerial photography it is stated that this means of making surveys was definitely accepted in 1925 as an accurate scientific method. It is much cheaper than the ground method and effects a saving in time sometimes as high as 50 per cent and more.

Aeronautical Education

The work that is being done in aeronautical education, especially with reference to the Daniel Guggenheim School for Aeronautics and fund for the development of aeronautics are called attention to, as well as the legislation which since publication of this book has passed Congress. Chapter 12 gives a chronology of aeronautical events during 1925 with an elaboration on some of the major events. This is amplified by Chapter 13 which gives the most complete summary of aeronautics throughout the world we have yet seen in print. The *Year Book* concludes with a summary of technical developments during 1925, covering airplanes, power plants, instruments, navigation aids, accessories, materials and supplies. The aircraft engine

and design section gives the major specifications, outline drawings and dimensions of all the important new craft developed during 1925, while the appendix gives tables and interesting data on such items as number and location of landing fields, the air mail service and contract routes, aircraft exports and appropriations, official air records, and the organization and activities of the various government departments connected with aeronautics.

Both the *Year Book* and *Transport Aviation* are profusely illustrated. Taken together they not only give the investor all the available published data obtainable, and the engineer data on every phase of equipment, design, operation and maintenance, but they furnish a fascinating story of the first beginnings of real commercial aviation on a business basis, a story the layman in aeronautical matters can also appreciate.

Soviet Offers Design Prizes

THE Soviet Government of Russia is organizing a prize competition for designs of internal combustion engine locomotives, in connection with which three prizes are being offered, of \$30,000, \$20,000 and \$12,500. The locomotive must be designed for operation on tracks of the standard Russian 60-inch gage and be able to negotiate curves of 825 ft. radius. A freight train locomotive must be capable of developing a tractive force at the circumference of the driving wheels of not less than 33,000 lbs. at a speed of 10 m.p.h., and a passenger locomotive of not less than 26,400 lbs. at 18.65 m.p.h.

The material to be submitted by contestants includes general assembly drawings of the locomotive (longitudinal and transverse sections and plans) in one-twentieth actual size, with dimensions in metric measures; models of the engine, transmission and control mechanism; data concerning the traction characteristics, the effect of the locomotive on the tracks and the probable cost of ten and fifty units.

In judging the designs submitted the jury will be guided by the cost of construction, fuel and oil economy, and by the adaptability of the design to railroad service, that is easy starting and smooth running, and a minimum injurious effect on the track.

The organization in charge of the contest may be reached by addressing it as follows: Technical Bureau of the Committee on Internal Combustion Engine Locomotives of the Commissariat of the People for Roads and Communications, Moscow, Russia, Gorokhovskia 8, kv. 57.

What was probably the first oil-electric locomotive ever built was constructed for service in Russia by a German firm about a year ago. The interest of the Russian Government in internal combustion engine locomotives is due to the fact that there are large sections in Russia where water is exceedingly scarce and where the use of steam locomotives is therefore attended with great difficulties.

A RECENT item in *The Aeroplane* states that a material known as Bergolin, which has been produced by H. F. Bergholz of Hamburg, has been found very effective as a protective dressing for dies used in the casting of light alloys. It is stated that one coating of this material will suffice for 200 to 300 castings before it need be renewed. It is applied to the dies by mixing it with water and spraying or painting it on the previously heated die. Bergolin, it is claimed, can be used not only for duralumin but also for tin, zinc, lead, brass or white-metal castings.

SECOND quarter automotive business in some of the chief export markets is summarized in the accompanying reports which have come to the Automotive Division, Bureau of Foreign and Domestic Commerce, from foreign representatives of the Departments of State and Commerce.

In addition to reviewing second quarter sales, the reports give a picture of the outlook for the third quarter.

In several of the most important markets, in South America for instance, third quarter sales are likely to be well ahead of those recorded in the second quarter with the total for the year depending largely on crop conditions.

Emphasis is placed on the difficulties which dealers are having with used cars in several markets, indicating that this merchandising problem is now coming to the front in the foreign field and must be recognized by the manufacturers.

Argentina

THE market for automotive products in Argentina for the second quarter of 1926 slowed down considerably, due in part to the usual seasonal decline expected at this time, but more particularly to the actual general depression in the economic conditions of the country. The fall rains rendered country roads almost impassable, which curtailed interior sales to an appreciable extent. Imports of automobiles and trucks were exceptionally high during the summer months of November, December and January.

Prospects for good crops are bright and as a result importers have placed heavy orders for cars. Stocks are considerably ahead of the sales, a total of some 43,900 passenger cars being imported during the past nine months. Of these only 8000 were imported during the second quarter, when sales were only fair. January found a slowing up of the market and sales have fallen off every month since.

Competition is keen but lies almost entirely among cars of American make. The Italian "Fiat" leads among the foreign competitors, but when it is considered that about 97 per cent of all imports are of American manufacture it is seen that this competition is hardly felt. There are a few American cars selling at prices which are out of line in relation to their list prices in the United States, with the result that their sales volume is curtailed. Up to the close of 1925 the question of used cars presented no serious difficulty, but during the present year this problem has received serious consideration. It was estimated that there are approximately 175,000 passenger cars in operation, of which 100,000 are less than two years old. Only three or four dealers will take in used cars and the disposition of trade-ins is therefore left to the would-be purchaser of the new car.

The market for trucks, although slackening a bit during

the second quarter, does not show such decreases in imports and sales as does the passenger car market. Total imports during the first quarter were 2455, of which 2359 were of American make, while imports of the second quarter amounted to 2080, of which 1990 were of American make.

The total sales for 1926 largely depend upon crop conditions during the latter months of the year. The demand for heavy-duty trucks continues to be small, a preference being for the light and low-priced American trucks of local assembly.

Chile

THE automotive market shared in the general depression felt by Chilean business during the second quarter. The diminished volume of trade in April was followed by successive drops in May and June. In fact, in the latter month there were so few sales that some dealers cabled their principals to withhold usual monthly shipments, while an important local assembling plant reduced production to a very low scale. Imports during May were heavy, and as a consequence, stocks were above normal. The recent introduction of a high-priced and two medium-priced American motor cars has augmented competition. The German "Opel" also commenced to operate during June. On the other hand, agency arrangements have been discontinued by three American manufacturers. An automobile exposition held in Santiago from May 8 to May 20, by the Chilean branch of an important American manufacturer, caused an increase in sales of their higher priced models for that month.

The truck market has been extremely dull. Bus business has been in practically the same condition as trucks. Recent rains have rendered the majority of suburban roads impassable and, consequently, transport companies are confined to city operations where competition is keen. During the past three months there has been an emphasized complaint from dealers that too much capital is needed to successfully handle trucks and buses, particularly when over-drafts and discounts pay such high rates as are prevailing at present.

Mexico

SALES of automobiles in the Guadalajara Consular District during the second quarter showed a decrease of 33 1/3 per cent in passenger cars and 60 per cent in trucks. The decision of the Federal Government to remove the sales tax, relieved the situation to some extent. However, one American medium-priced car exceeded during the quarter sales of any previous quarter, while some makes showed no sales at all. Sales during this quarter amounted to 109 passenger cars as compared with 159 the preceding quarter and 22 trucks as compared with 56 the first quarter.

Twenty-four American motor buses were imported, during the second quarter, these were of the street-car type, with a capacity of 20 passengers. There were three fac-

There *in* Foreign Automotive Markets

tors influencing sales during the second quarter—the Federal decree assessing the 10 per cent sales price tax on all new cars; the rainy season commencing early in June, during which time automobiles are confined to towns and cities; and the economic and commercial depression which is apparently becoming acute. Money is very scarce and some dealers are dangerously overstocked with second-hand cars in their efforts to make sales.

Czecho-slovakia

THE second quarter of the current year in Czecho-slovakia saw a continuation of the development in the market for automotive vehicles. Practically all dealers reported a substantial increase in business despite the period of industrial depression through which this country was passing during this quarter. The depression in French and Belgium exchanges has been a contributing factor in the increased volume of sales reported for automobiles from these countries, while in the case of Italian cars, price reductions have been of material assistance in stimulating business.

Sales of American passenger cars have been in such volume as to be leading in this market. The outstanding development during the present quarter, in so far as American automobiles are concerned, was the notification which was given by the Ministry of Commerce on May 19, that in view of the fact that the contingent of 500 cars and trucks from November 1 to November 1, had been exhausted, no more licenses would be granted until the beginning of the new contingent year. The Ministry of Commerce agreed, however, to issue additional licenses for cars which had been paid for but had not yet been shipped, cars which were en route and cars which had already arrived at the customs and for which licenses had not as yet been granted. Fortunately, the dealers representing American companies had many cars coming under these classifications. A specific increase in the contingent to cover the period up to the first of November has been refused, but it is believed that with the automobiles on hand plus the cars which will be admitted there will be sufficient stocks to carry through to the first of November.

Spain

AUTOMOTIVE registrations for the month of June showed an increase in sales over the previous month. In fact the figures were almost as large as for April which was the leading month of this year, so far. While an American light car still holds the lead by a comfortable margin, similar models of French cars have made substantial gains. The further depreciation of the franc as well as the improvement of the pesetas has made it possible for French manufacturers to cut their prices.

There are some indications that the increased sale of light foreign cars is cutting in on the lighter models of medium priced American cars.

The second-hand car problem still remains to be solved. A number of old, well established automobile firms are reported to be deeply involved financially through having large numbers of cars sold on easy payment terms to taxi chauffeurs who have not been able to pay the monthly instalments. A few of the local representatives of American motor car manufacturers are reported to be in this situation, but others who have refused to do business in this way—although they have not been able to make on any sales—are at least financially intact. This matter is being discussed by the automobile dealers' association, but as yet no solution has been found.

The market for trucks remains unchanged.

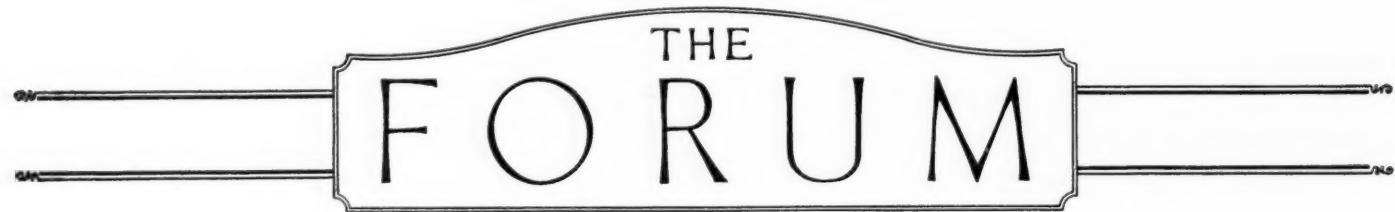
China

MOTOR vehicle imports into Shanghai during the second quarter were: Passenger cars, 475; trucks, 75, and motorcycles, 8. Stocks in Shanghai are normal, while Hankow stocks are said to be rather high. In the latter city sales are slow, with the exception of occasional orders in large quantities for use on military routes. Normal passenger car and truck buying in Hankow was less than at this time last year. The market in Shanghai continues to absorb practically all second-hand cars at fair prices. There is a tendency on the part of garages to refrain as much as possible from taking used cars as part payment on new purchases. The outlook for the third quarter is not good, due to seasonal conditions, but dealers feel that there will be no undue falling off in sales.

Ceylon

AMERICAN cars lead all others, comprising 60 per cent of the sales in the Ceylon market, while British, French and Italian models follow in their respective order. The most popular British car is the Standard, with the Clyno, Austin, Morris and Rover following. A well-known American model is the only car in Ceylon that is credited with a registration of over 1000. There are only eight makes at present in Ceylon that show a registration of over 200. Seven of these are American make, the eighth being the Italian Fiat with 285, which appears to be the greatest contender, with other makes as follows: Bianchi, 33; Citroen, 174; Renault, 120; Berliet, 40; Delage, 39; Peugeot, 32; Adler, 56, and the Opel, 23. The only other foreign car is the Belgian-Minerva, of which 32 were in use on March 31, 1926.

Imports of passenger cars into Colombo show remarkable monthly increases from 204 in January to 385 in May. Motor trucks and buses show a steady trade.



Torque Equalization of Brakes

Tests show that this, rather than equalization of braking pressure, is needed to increase efficiency.

Editor AUTOMOTIVE INDUSTRIES:

We note in the issue of June 24th your comments on Bus and Truck brakes and especially your statement that "the problem of furnishing a system which can lose a small part of its effectiveness through ordinary usage and still be within the law, is interesting manufacturers greatly."

Tests made by us and by the Bureau of Standards indicate a wide variation in the efficiency of the average brake systems on pleasure cars, this efficiency varying from a high value of almost 95 per cent to a low value of 45 per cent, with an average around 60 per cent.

In addition to the above tests, a count of wheel marks on the road was conducted during the summer of 1924 as follows:

Marks had to be distinct and if the mark of one wheel only was seen, it was not counted as a "single" if so near the edge that a possibility existed that the mark of the other wheel was off the road. A "double" was not counted if it appeared doubtful that the two marks were not made by the same machine. A "double" was counted if two marks were visible even though it was apparent from the character of the marks that one brake was considerably more powerful than the other. Marks were counted as found both on city streets and country roads and the count was made over a wide section of the country bounded by the states of New York, Michigan and Maryland, and over a period of about two months.

The result follows:

Single Marks	1251
Double Marks	149
Total	1400

Doubles 10.64% of the total

It is thus seen that, out of 1400 recorded cases of brake application under favorable conditions of weather and road, about 10 per cent were found to show an efficient or fairly efficient application of the braking power of the vehicle. This record is entirely impartial; it takes the evidence as found and it is believed to be substantially correct. During the count the percentage varied between a high value of 13.4 per cent and a low value of 6.5 per cent, but was generally found very close to 10 per cent. Such a performance can only be considered very poor.

The principal cause of such low efficiency is almost entirely due to the fact that each brake is not doing its

share of the work in retarding the speed of the vehicle, and points to the necessity of equalization, not of the brake pressure, but of the retarding forces delivered to the road by the braked wheels.

Tests and experience with brakes so equalized over a period of almost five years on many types of pleasure cars show that, in addition to the elimination of the danger of skidding, the brake efficiency is maintained at an average of about 85 per cent with a much higher low value of about 75 per cent.

In such a system of equalization the brake pressure is not necessarily the same for all brakes but is automatically distributed to the brakes in amounts sufficient to produce a balance of brake torque. This system, of necessity, takes into consideration the character of the road surface and the adhesion of the tires to that surface and integrates them out of the equation, a result impossible of accomplishment with pressure equalized brakes.

It would therefore appear that torque equalization of brakes would go far toward solving the manufacturers' problem of getting more efficient brakes.

Very truly yours,

GEORGE L. SMITH.
Engineer, United States Ordnance Co.

Stroke-Bore Ratios

Editor AUTOMOTIVE INDUSTRIES:

In reply to Ch. H. Bouvy's comments (June 10) upon my letter, I should like to illuminate some of his arguments. I, too, have read Mr. Ricardo's article of July, 1925, which was partly reprinted in these pages, and I think I made it quite clear that I was speaking of side valve engines only. Therefore, it seemed to me unnecessary to cite Mr. Ricardo's views about overhead valve engine design. I am grateful, however, to Mr. Bouvy for not neglecting to reprint the second part of Mr. Ricardo's statement, which is fully supporting my contentions. And I gather from Mr. Ricardo's latest publication (*Engines of High Output*) that he has not changed his mind on the subject since the "High Speed Engines" came out.

I am still convinced that the bore determines the length of an engine. In order to state my point, I have to dig into the fundamentals of valve design—a subject which I originally intended to bring up on a later date. Mr. Bouvy will admit my contention as soon as he is

willing to give up the traditional idea of valve design. He does not tell us what he understands by an "efficient valve layout" which goes to make a good combustion chamber. It is this: To make a small valve with a high lift instead of a big one with a small lift. It can be shown on the same theoretical basis covering the inertia forces of the reciprocating train, how a small valve with a high lift requires less spring force than a big valve of the same capacity. Assuming a lift of .30 times the throat diameter, we find that the distance across the valves is little in excess of the bore, even if we provide water space between them. And nothing stops us from packing the cylinders close together. Besides, the high-lift valve is approved airplane and racing engine practice; the objection of noise is a matter of the clearance take-up and has nothing to do with the lift proper.

Resuming again the points in question; lesser inertia forces; therefore improved acceleration and smooth running; improved thermal efficiency and reduced overall length—it seems to me that they stand for good and that after all a high stroke-bore ratio does make a better engine.

FRED THOMER.

Electric Welding Processes

Editor AUTOMOTIVE INDUSTRIES:

Recent expansion of the automobile industry and increasing use of metal bodies has brought about many developments in electric welders and has made great demands upon welding engineers. Possibly the most important problem has been to develop a welding device which would make a smooth, invisible weld so that grinding and filing might be reduced to a minimum.

With spot welding equipment this has been accomplished by replacing the old, bulky spot welders with small, portable machines of higher efficiency and automatic control. In welding light body parts, such as attaching the dash to the cowl, portable spot welders of about 3 K.W. have been developed which weigh about 70 lb. These machines are very easy to handle since they are suspended and balanced with counter weights. It is not unusual to obtain from 15,000 to 20,000 welds per day per man with such a welder.

A further development of this type of equipment is the multiple welder which may be either portable or stationary and makes two or more spot welds simultaneously.

In welding of heavy stock such as pillars, heavy duty spot welders of 50 to 75 K.W. are used. These machines are operated by compressed air or mechanical drive so that the operator, relieved of physical exertions, is free to give his full attention to the actual welding operation, thus obtaining better results and without fatigue.

Another important question is that of seam welding. For this two types of welders are employed, roller welders and flash welders.

A disadvantage of the first method, whether the welding current or the weld itself is interrupted, is that the material is overlapped and is somewhat unsightly. This method is also slow. It is almost impossible to get more than 150 ft. of continuous seam per hour on 20 gage steel. With roller welding it is possible, however, to weld dirty or scaly metal.

The flash welder is the outgrowth of the butt welder, just as the roller welder is the outgrowth of the spot welder. When flash welding was first used it developed troubles such as usually accompany all new processes. After a few years of use many of these troubles, if not

all, have been eliminated and flash welding has become a satisfactory production method. It is not unusual to weld from 400 to 500 cowls or rear seats per day with one of these machines.

Development of such equipment has had a very good effect upon production costs as can be seen from the following example. To weld a rear seat of 20 gage steel with a seam 25 in. long a double flash welder is used—one which welds both seams at once. The effective welding period is 1½ sec. with current of 150 K. W. Assuming current cost at \$0.05 per K. W. hr. total current cost per weld is:

$$\begin{array}{r} 150 \times 1.5 \times .05 \\ \hline 3600 \end{array} = \$0.03$$

Each operator welds 300 rear seats per day of eight hours and earns \$10 making the cost of labor \$.033 per seat and a total welding cost of \$.036.

PETER FASSLER.

Motor and Railroad Earnings

THE simultaneous establishment of records for railroad earnings and automobile production in the first half of 1926 has set statisticians to figuring on the comparative growth of the two industries devoted to transportation. A comparison reveals a steady growth in the demand for railroad service, damped somewhat by stringent regulation, but amazing progress in the manufacture of automobiles and willingness on the part of the public to pay liberally for automobile service, says a recent article in the *New York Times*.

Greater productivity of the automobile dollar is shown in comparison with the railroad dollar as to investment, annual turnover, gross revenues and total sales as well as in net profits. With total capitalization of about \$18,500,000,000, the railroads of the country produced only \$1,121,681,000 in profits in 1925, while the automobile industry with only \$1,888,028,810 capitalization produced \$440,000,000. In other words, with one-tenth of the capital investment of the railroads, the automobile industry obtained more than a third as much profit.

At last year's rate railroad capital is turned over only once in three years, while automobile capital is turned over two and one-quarter times in one year.

Freedom from Government regulation and rapid turnover of capital have made motor securities favorite speculative and investment mediums, activity in them overshadowing the rails at the present time. The industry as a whole earned 23.3 per cent on its capital in 1925, compared with about 6 per cent by the railroads.

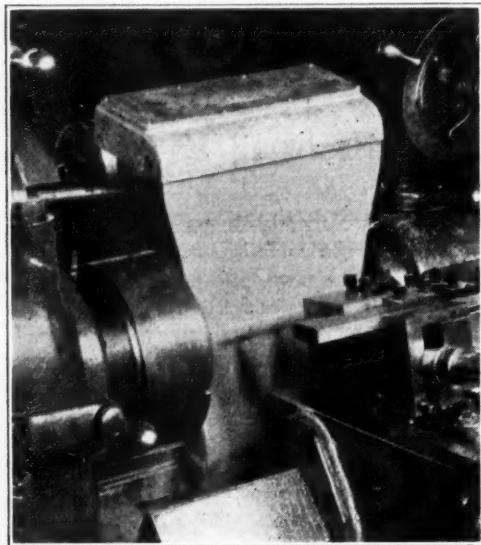
Including stocks of motor accessory manufacturing companies and tire companies, Dow, Jones & Co. placed transactions of motor stocks in 1925 on the New York Stock Exchange at 75,767,500 shares or 16.3 per cent of the total transactions of 463,996,100 shares. Rail shares traded in during the year totaled 69,017,800, or 14.8 per cent of the total. Shares of transportation companies thus aggregated 31.1 per cent of total dealings on the Stock Exchange.

The automobile, accessory and tire industries employed not quite half as many workers in 1925 as the railroad industry—831,000 compared with 1,678,000 by the railroads. Including salesmen, garage employees and professional chauffeurs, automobile employees last year numbered 3,204,000. In the automobile industry alone in 1925 there were 361,442 persons engaged, who received \$649,668,000, an average of \$1799. In the railroad industry there were 1,768,000 persons who received \$2,896,000,000, an average of \$1635.

New Ideas in Machine Tools

A Centrifugal Coolant Pump

GOULD'S PUMPS, Inc., Seneca Falls, N. Y., has recently developed a motor-driven centrifugal pump for circulating the coolant on machine tools. The pumps on many machine tools have no effective means of sepa-

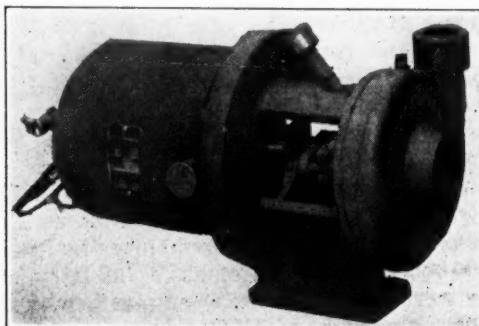


Goulds motor-driven coolant pump, a replacement unit for machine tools

rating the chips, and as a result of these getting into the pump it wears rapidly. In fact, pump trouble is said to be one of the greatest sources of grief with modern high speed tools. The pump referred to, being of the centrifugal type, throws any chips contained in the coolant reaching it, to the outside of the casing, thus protecting the working parts.

20 Gallons Per Minute

The pump has a capacity of 20 gallons per minute against a pressure of 9 lbs. p. sq. in. and is driven by a $\frac{1}{4}$ hp. motor at a speed of 1750 r.p.m. This large capacity is very desirable for high speed work. Being direct-connected to its motor, the pump requires no belt, and it can be operated in any position. The head is held in place by eight equally spaced bolts, and the discharge



Goulds coolant distributor

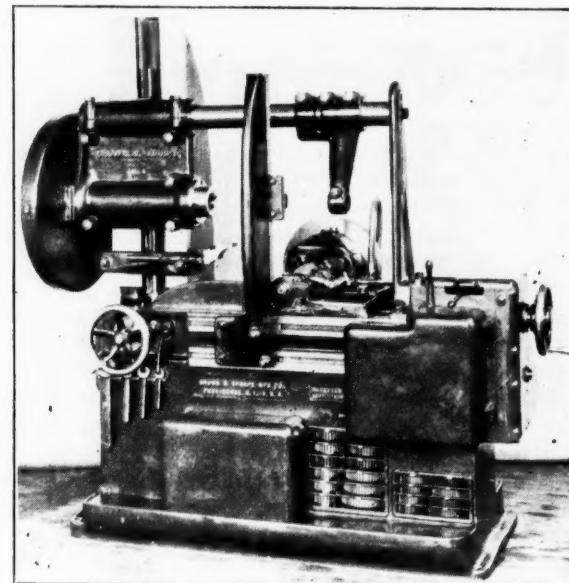
opening therefore can be placed in eight different angular positions. Bronze bushings are used. The same pump is also furnished for belt drive.

In connection with this pump Goulds Pumps also make a coolant distributor, as illustrated by one of the accompanying photos. It is provided with internal baffles and gives a uniform distribution of the liquid over a considerable length of the work.

Gear Cutting Machine Improved

A NUMBER of improvements have recently been made in the Brown & Sharpe No. 4 automatic gear cutting machine, the most important being in the method of supporting the gear blanks. These improvements permit heavy work to be set up with greater ease and at the same time maintain a high degree of accuracy.

In redesigning the machine, the work spindle slide has been made heavier and equipped with a solid steel over-



No. 4 automatic gear cutting machine

arm which clears gears to $19\frac{7}{8}$ in. diameter. The arm carries a work support head, equipped with an adjustable center, which supports the outer end of the work arbor, and a relocating device for relocating the head after having once been centered. The overarm is further supported at its outer end by a heavy vertical brace which is securely fastened to the bed of the machine and to the feed case. An upright support, sliding on ways on the front of the bed, takes all work up to the full capacity of the machine.

To conform with this new design, the work spindle slide has been made heavier, having wider and heavier strap and gib and the upright-ways of the bed strengthened, the metal of the side walls supporting these ways being thickened to provide additional support. The feed screw which operates the cutter slide has been increased in diameter to give greater durability. The index worm shaft has also been increased in size and provided with a heavier index worm bracket.

Talk of Injunction Against Compulsory Insurance in Massachusetts

Motor vehicle owners voicing protests against new law as day of enforcement approaches. Taxicab companies engage attorney. Operators of truck fleets face higher premiums.

THE compulsory automotive liability insurance caldron has begun to seethe in earnest in Massachusetts. With enforcement of this law in the Bay State a little more than four months off, individual motorists, commercial transportation companies, insurance men, State officials and politicians are prying into the various aspects of the situation in an endeavor to find out exactly how it will affect their respective interests.

The law was passed two years ago but its enforcement was postponed until Jan. 1, 1927, as a sop, it is said, to those who opposed it. Under its provisions, all motor vehicle owners in Massachusetts must be able to show that they are financially liable to the extent of \$5000 before they can secure 1927 registration certificates.

The motorist is given his choice of three methods of obtaining the necessary financial protection. He can take out a \$5000 liability insurance policy. He can take out a surety bond in the same amount. Or, he can post \$5000 in cash or securities with the State highway officials. But he must do one of these three things before he gets his 1927 license plates.

For nearly two years now the motor vehicle owners of Massachusetts have known that this law was going into effect, but it is only within the past few weeks that they have begun to realize the full significance and meaning of the act which, it is estimated, will cost them from \$35,000,000 to \$40,000,000 a year in insurance premiums.

Interest in the matter began to crystallize with the holding of the first hearing on the law by State Insurance Commissioner Wesley K. Monk, this week.

Hearing Regarded as Failure

When the hearing ended most of the representatives of the automobile organizations expressed the opinion flatly that it was a waste of time and mere buncombe. Commissioner Monk refused to give any intimation what the new rates would be; and on top of that he added that after he made the rates public he would not grant any hearing. In other words if they do not suit the motorists the door is closed to them to make a protest.

In view of this statement some of the automobile men present refused to talk, and others said they were talking blindly. When it was over a number of the men stated that if the rates were not satisfactory they will call a meeting and request a hearing from Governor Fuller over the head of the insurance commissioner, who is an appointive officer. Under the law the rates must be made public before Sept. 1.

A few days previous to the hearing it was announced by John Rockett, of the Town Taxi Co., that compulsory insurance will probably cost his company alone \$125,000

a year more in operating expenses, which will necessitate higher fares to the public.

Then the Yellow Cab Co., Checker Cab Co., Armstrong Transfer Co., Independent Taxicab Operators Association, and others, started to voice protests. An attorney has been retained by the Town, Armstrong and Yellow Cab companies to make a fight on their behalf.

Mr. Rockett cites the case for his company by stating that it operates 225 cabs, and last year the total damage suits reached only \$12,000.

Motor Clubs Protesting

Objection is also coming from the motor clubs. Not since the matter of arranging the details of the law was undertaken by Commissioner Monk has there been, until this week, any chance given the automobile interests to sit in to learn what was going on, or to make suggestions.

The big fleet operators of trucks have just received a jolt through the announcement by Commissioner Monk that under an opinion of Attorney General Jay Benton it will be illegal to allow the issuing of fleet insurance at lower rates to those owning large numbers of commercial vehicles and who have been able in the past to get special terms. Also the Attorney General announces that there will be no objection to insurance companies placing insurance policy rates on the merit system for those who have skill and are careful, but that this is no time to start it. In other words it is not to be tried until the insurance companies have had a chance to investigate more thoroughly those who might be entitled to such policies.

During the last few days there has been talk in certain quarters of injunction proceeding to restrain the State from putting the law into effect.

That the measure will play a part in the political fight for U. S. Senator in Massachusetts this fall is regarded as certain now. The announcement by State officials that up to August 1 this year more than \$13,000,000 had been received from motorists as a result of increased horsepower ratings, higher fees for cars and trucks, etc., while the amount this time a year ago was only \$8,000,000, has been rather startling. And the fact that in 1925 there was more than \$1,000,000 left over unspent has been brought out as an argument that the increases were not necessary. As Commissioner William F. Williams of the Department of Public Works engineered the upward revising of the ratings, and he was appointed by Governor Cox, as coming from New Bedford the home of Senator Williams, it is said that the latter, who is up for reelection, is going to be called to account for what the motorists claim were unnecessary increases, with no thought given

to old cars whose power ratings had gone down actually, but were revised upward by Mr. Williams.

Under the insurance bill no one has any idea what the total premiums will be, but some people have figured out that it may run up to \$50,000,000 unless there is a wholesale sweeping of cars off the roads. That it will affect the sale of used cars many dealers agree. And it is expected that a lot of owners will not reregister their small second-hand cars.

Protection is Limited

Motorists are awakening to the fact also that the policies are not to give full protection because of the law. It refers to accidents to persons "on the State highways." Therefore, if a person is injured on a private way, such as going into a garage or filling station, or on unaccepted streets, there is no clause in the law to protect this.

The new law will be difficult, if not impossible, to evade. No motorist will even get his license plates unless he shows that he has complied with the law. The insurance and surety companies will furnish him with a certificate showing that he has been granted an insurance policy or a surety bond. The same method will be followed out by the Division of Highways. This certificate must be presented with the application for license and unless it is forthcoming the license cannot be issued.

The law does not apply to the cars of non-residents except where, under existing law, these cars are compelled to obtain licenses. Neither does the legislation make any mention of property damage insurance. This form of protection can be taken out, if the individual motorist so desires. Neither is the motorist compelled to extend this protection beyond the confines of the Commonwealth. This matter, also, is purely optional.

Under the present motor vehicle laws of Massachusetts the State authorities determine who shall and who shall not be adjudged fit to drive an automobile. Under the new law this decision will rest greatly with the insurance companies. Even should the State determine that a man is fit to drive a car and is willing to grant him a license to do so he must find an insurance company that will sell him a policy before he gets the license. This contingency is provided against in part by a board of appeal, which consists of the Massachusetts Insurance Commissioner, the Registrar of Motor Vehicles and the Attorney-General. The opinion in automobile circles, however, is that this board will concur with the decision of the insurance companies in the majority of cases.

Instalment Plan Insurance

Undoubtedly hundreds of motorists will have trouble accumulating enough ready cash to pay for their licenses and their insurance. Some talk has been current about instalment plan insurance. Some individuals, it was learned officially last week, will finance motorists for an insurance policy in much the same manner that finance companies assist persons in buying automobiles.

The effect of the new law on the courts of Massachusetts is highly problematical. Some authorities believe it will "clog" the courts with damage cases. Every motorist will be "good for a judgment." Today there is always a good chance that a judgment against a motorist will prove uncollectible and for that reason few attorneys will sue a damage case against an automobilist. With a virtual guarantee that every judgment can be collected it is believed attorneys will sue in practically every case where a settlement is not to their liking. Some persons are of the opinion that a special motor claims court will be an outgrowth of the compulsory insurance law.

There is also the all important question of whether or not the new law will result in a wholesale reduction in the

number of cars on the roads of Massachusetts. It is the opinion of insurance experts who have given the matter serious study that at least 50,000 less cars will be registered in the Bay State during 1927 than in 1926.

The dealers in second-hand cars believe they will suffer most from the new law. A man who buys a second hand car today for \$150 to \$200 and pays down \$75 to \$100 will have his down payment increased about fifty per cent when he has to pay for his license and his insurance. It is obvious that this will reflect itself in the dealer's business. However, second-hand car dealers in Boston and Worcester, with whom the writer has talked, believe their business will stand up as they are ready to make new efforts to obtain business in 1927. Perhaps this renewed vigor applied to business getting will result in 1927 being an even better year for them than 1926.

Traffic Situation Worries London

LONDON is feeling the effects of a traffic congestion which threatens to reach serious proportions and city officials have become alarmed at the outlook. The increase in the number of motor vehicles has compelled London to make a special effort to speed up its traffic. There are not as many motor vehicles in the whole of Great Britain as there are in Pennsylvania, or New York, or Illinois, or Ohio, or California. But Britain is a small island, as large as one-third of Texas, and her streets and roads are narrow and crooked. Her traffic has become so dense that it is no faster than it was fifty years ago in an age of horses and mud roads.

The entire control of the street traffic is now in the hands of a Traffic Advisory Committee of experts, who first visited New York, Philadelphia, Boston, Paris and Berlin, then drew up a system of traffic control to suit the streets of London. They have full power over the 2500 miles of streets in London. Already this committee of experts has put in force the following new rules:

All vehicles stopping for any length of time in a main street must occupy the center line of the street and not either side.

All horse-drawn vehicles are to be excluded from certain busy streets at hours when the traffic is heaviest.

The gyratory system is introduced in four of the busiest squares in London—Westminster, Trafalgar Square, Hyde Park Corner and Piccadilly Circus.

The right paths on these squares are marked on the road with white paint. All the traffic moves to the left in a perpetual circle.

There is no longer any stoppage of vehicles passing through these squares. Every vehicle turns to the left as soon as it enters the square—"a merry-go-round," the Londoners call it. Also, London has adopted the American idea of one-way streets.

Eventually, the experts say the main streets of London must either be 150 feet wide or else be double-decked. They must have more street signs and direction posts. There are not half enough of these at present.

The busiest spot in London at present is Hyde Park corner. Here there is a torrent of 60,000 vehicles an hour, in the busiest part of the day.

There are twice as many street accidents in London as there were a few years ago. During the last three months there were 253 people killed on the streets of London and 30,628 injured. In an average London day, three people are killed and 336 are injured.

London is growing more rapidly than ever before. Suburban towns by the dozen are springing up around it. It now covers more than 700 square miles, with a population of 8,000,000.

EDITORIAL

Growing Distribution Costs

THE economists have told us for decades past that there is a thing called the law of diminishing returns which works in the sale of goods as well as in the cultivation of land. Decreased production costs resulting from increased quantity for many years made possible growing profits in the automobile manufacturing field despite constantly falling price levels. But all the while that prices were falling and distribution widening, the cost of distribution was gradually increasing. Only a part of this growing cost was due to inefficiencies in the automotive distribution system; a good part of it was due to the inevitable demand for greater convenience in buying and service.

Every company theoretically sooner or later stands the chance of getting to a point where the necessity for disposing of greater quantities of its product will make marketing costs increase faster than production economies accrue from the lower overhead obtained from the higher output. That this point is far distant for many companies today and that it seemed as though some organizations never reached it however much they stepped up production schedules, doesn't alter the basic fact that the point always exists economically.

No company is superior to economic law, although it may so order its activities to synchronize with the workings of these laws so well as to give the impression that economics are governed by the company rather than the company by economics. It has been said that Ford, for example, seemed to be superior to all economic law. As the time goes on, the facts do not bear out that idea.

Uniform Traffic Rules

"IT seems the height of absurdity," cries the *Detroit Free Press* editorially, "that Secretary Hoover should find it needful to appear before the American Road Builders' Association to urge uniform traffic regulations throughout United States and Canada. Off hand one would say that even in a universally motorized civilization there must be sufficient sentiment to bring about this highly desirable arrangement on purely humanitarian grounds, quite apart from the fact that in a single twelvemonth the motor death toll in this country was in excess of 30,000 potential wage earners, while conservative estimate covering the same period place the property loss from the same cause at \$600,000,000."

Uniform traffic regulations certainly are desirable from the standpoint of efficient use of motor vehicles,

convenience of car drivers and to some extent from the standpoint of reducing property damage. Their effect in reducing the toll of accidents and automobile deaths, however, can easily be overestimated. If traffic rules became uniform tomorrow, it is doubtful if that fact alone would have any very material effect in reducing motor vehicle accidents. Only a few personal injury accidents, relatively speaking, actually are caused by confusion in regard to traffic rules.

The fight for uniformity in traffic regulation should be continued vigorously, but expectation of results should be confined to those fields in which uniformity really is likely to have marked effects.

Paying Indirect Workers

IN almost every important plant in the automotive industry today production executives are studying closely the question of incentive wage payments for indirect workers. Those plants which already have in operation some form of wage incentive plan for productive workers—and they are in large majority—naturally are finding useful their experience and methods in attempting to adapt a similar principle in paying indirect labor. It has been found in most cases, however, that the adaptation of a single wage payment method to all types of indirect labor is practically impossible, despite the fact that a feasible plan, once worked out, usually can be applied with only minor variations to all types of direct labor.

The situation is summarized by one factory executive who says, "Working out an incentive plan for indirect workers almost means individual study of every type of job, working out of standards which can properly be applied to it and experimenting with seemingly feasible plans until the right one is found. The job can't be done on a wholesale scale as often is possible in applying wage incentives to direct labor."

In a number of plants which have been operating on a group bonus plan of payment, it has been relatively simple to put certain indirect workers on an incentive basis simply by making them members of the group of production workers with which their efforts tie in. Utilization of this by-product of the group bonus plan solves the problem for some plants using this system insofar at least as a certain percentage of indirect workers are concerned. But even in these plants, there are, of course, many other indirect workers whose work does not tie up entirely with a single department.

Exchange of ideas and experiences regarding solution of special cases as regards putting indirect workers on an incentive basis seems specially desirable at this time.

AUTOMOTIVE NEWS SECTION INDUSTRIES

Philadelphia, Pennsylvania

Thursday, August 26, 1926

High Fall Production Seen in Steady Retail Buying

PHILADELPHIA, Aug. 25—Continued progress toward resumption of large scale automobile manufacturing soon after Sept. 1 is noted in the activities at the factory centers. By that time a considerable volume of orders will have been built-up against manufacturing schedules and a high rate of output is practically assured for the early fall months. Large scale buying from middle western districts is becoming evident and there is noted a resumption of interest from eastern industrial centers which characterized the early part of the year.

The prospect of large demand from foreign markets also is giving manufacturers much cheer. Export sales have shown a steadily mounting tendency throughout the year and in many countries the best season for automobile sales is still ahead. Demand for cars abroad is limited to a considerable extent by road inadequacy but this is being steadily overcome largely through interest and co-operation of American car builders.

A statement by Roy D. Chapin, chairman of the Highway Committee of the National Automobile Chamber of Commerce this week will show an approximate \$800,000,000 worth of highways contemplated in foreign countries in the immediate future. Of this total \$550,000,000 will be for main highways developed under national supervision in leading countries. The largest part of this highway development will be in countries having no automotive industry of their own. Immediately it forecasts a large demand for American road-building machinery, with an assured larger motor car demand later.

Conditions in the retail field in the United States continue to show steady improvement. Dealer conditions are generally better, due in large part to active co-operation from factories, both with regard to control of shipments and assistance in developing retail business along sound lines. Good financial position of most factories is permitting a more extensive dealer development program than ever before.

Stromberg Earns \$2.52 a Share in Second Quarter

CHICAGO, Aug. 25—The Stromberg Carburetor Co. of America, Inc., reports net profit of \$201,709 for the June quarter after expenses, Federal taxes, etc. This is equal to \$2.52 a share earned on 80,000 shares of no par stock.

In the same quarter last year net profit was \$225,064 or \$2.81 a share.

For the first six months of this year the company earned \$336,206 or \$4.20 a share, compared with \$385,369 or \$4.81 a share in the first half of 1925.

1926 May Not Better Output of Last Year

Trend of Production in Remaining Months Likely to be Under 1925

PHILADELPHIA, Aug. 25—Although, as shown by the accompanying table, car and truck production this year is still well ahead of 1925, there is reason to believe that the total for the current year will not better materially the mark of last year, when a new all time record was established. It may even be slightly lower, and this can occur without any slump in sales beyond the normal seasonal slackness in the final quarter.

Third quarter production last year was profoundly affected by the curtailment of the Ford factories in preparation for the new models and fourth quarter output was correspondingly raised to record heights when capacity was reached on the improved cars. A similar condition is not foreseen this year, and it is therefore reasonable to suppose that the fourth quarter will show the normal decline. In other words, the rather active production of the current quarter should be counter-balanced by a pronounced slackening in October, November and December.

Based on the figures of the first seven months alone, with seasonal variation taken into account, total output this year would be about 10 per cent over 1925. But for any part of the earlier months of the year, the indicated advance was much greater, ranging as high as 20 per cent based on the first quarter output.

Statistical forecasts of the future of automobile output are notably weak-kneed, because production is inevitably affected by sales conditions. But in view of the unexampled sales activity of the first seven or eight months of 1926, there seems no reason for expecting a better than normal market in the final months of the year.

JULY PRODUCTION APPROXIMATES 373,500

WASHINGTON, Aug. 24—July production of motor vehicles in the United States, as reported to the Department of Commerce, was 355,446 cars and trucks. Of this figure 315,861 were passenger cars and 39,585 were trucks. The July total compares with 383,652 passenger cars and trucks in June and 389,009 in July of last year. Canadian figures for July are not yet available. Production for the first seven months in the United States was 2,680,317 cars and trucks, compared with 2,484,254 in the same period last year, an increase of 196,063 cars and trucks.

Following is the production table for 1925 and seven months of 1926:

	Cars	Trucks	Total
Jan.	213,851	28,203	242,054
Feb.	253,955	34,482	288,437
March ..	334,214	45,180	379,394
April ...	393,262	47,984	441,246
May	384,548	45,719	430,267
June	366,510	38,151	404,661
July	360,124	41,870	401,994
Total	2,306,464	281,589	2,588,053
Aug.	223,517	37,850	261,367
Sept.	274,227	60,482	334,709
Oct.	408,017	46,013	454,030
Nov.	337,435	40,048	377,483
Dec.	286,141	34,488	320,629
Total	3,835,801	500,470	4,336,271
Jan.	284,703	33,461	318,164
Feb.	334,524	41,685	376,209
March ..	399,105	49,233	448,338
April ...	401,836	53,887	455,723
May	394,569	51,343	445,912
June	358,360	47,043	405,403
July	*331,900	41,600	373,500
Total	2,504,997	318,252	2,823,249
Estimate Including Canada.			

Chevrolet Develops New Type Commercial Bodies

DETROIT, Aug. 25—Chevrolet Motor Co. announces the development of a distinct type of commercial body, built entirely within the organization for use on Chevrolet chassis.

The outstanding feature is that practically the same cab is used on all bodies. The cab is similar in many respects to a coupe in that it affords all the comforts of the regular closed passenger body. Doors are 24 in. wide; windows are plate glass, and side windows are furnished with Ternstedt regulators. The cab is Biscay green, Duco finished and striped in gold. Cowl lights are standard.

Complete trucks are now available. They are one-ton panel delivery; one-ton stake and one-ton grain carrying body. Chassis is furnished with cab only.

Hupp Asks Approval of Stock Dividend

Cash Disbursement Increase Also Depends on Attitude of Stockholders

DETROIT, Aug. 25—According to a letter mailed yesterday by Charles D. Hastings, president, directors of the Hupp Motor Car Corp. have decided to declare a preliminary 10 per cent stock dividend and to increase the regular cash dividend rate on the capital stock, provided stockholders approve a proposed increase in the stock from 1,000,000 shares of \$10 par value to 2,000,000.

The proposition will be put to a vote at the annual meeting of stockholders on Sept. 8. Another matter to be disposed of is the plan to increase the directorate from eight to nine members, classifying them in three groups, each to hold office for three years.

Hupp looks forward to the greatest fall business in its history, according to O. C. Hutchinson, general sales manager. He bases his statement on a survey of business conditions in the United States and Canada.

"General prosperous conditions prevail in the entire North American continent," he said, "with practically no evidences of inflation or over-spending."

Hupmobile, which has been breaking all production records this year, expects August and September shipments to more than double corresponding months a year ago.

3 States Hit U. S. Truck, Bus Control

RALEIGH, N. C., Aug. 25—Definite opposition to Federal regulation of motor bus traffic on state highways was expressed at a conference here of members of the public utility commissions of North Carolina, South Carolina and Virginia. The importance of regulating such traffic was admitted by all of the officials, and regulations now in effect were discussed in detail, with the view of making them more satisfactory.

Representatives of the Carolina Motor Carriers' Association and of North Carolina shippers, attending the conference, also joined in the discussions. The meeting was a preliminary to the hearing the Interstate Commerce Commission will hold at Asheville, N. C., September 15, when the subject of motor bus traffic and its regulation will be investigated. The chief purpose of the tri-state meeting, it was explained, was to agree upon an attitude these states will take officially at that hearing.

A. J. Maxwell, of the North Carolina Corporation Commission, apparently expressed the sentiment of all the conferees when he declared that he regarded it as not within the province of the Federal government to regulate traffic on the

highways that the State of North Carolina has built.

A series of resolutions was adopted by the conference, some of which, in substance, declared: That interstate traffic of motor vehicles should be regulated as promptly as possible; that such regulation should be vested in state governments, "insofar as legally possible;" that public convenience and necessity should determine the granting of licenses to operate motor bus lines in interstate traffic.

Central Alloy Names Officers and Board

CANTON, OHIO, Aug. 23—New directors and officers of the Central Alloy Steel Corp. were elected at a meeting this week, as well as members of the executive and operating committees. F. J. Griffith is chairman of the board, and C. E. Stuart is president and treasurer. B. F. Fairless is vice-president and general manager; J. M. Schlendorf, vice-president and director of sales; C. W. Kreig, vice-president and secretary; G. H. Freeborn, assistant treasurer, and J. Paul Moseley, assistant secretary.

The directors include the above ranking officers, and W. H. Prescott, D. T. Croxton, W. G. Mather, L. M. Taggart, Harry Coulby, C. S. Eaton, J. O. Eaton, Philip Wick, Bayard Dominick and Elton Hoyt. The executive committee comprises Mr. Coulby, Mr. Griffith, Mr. Stuart, Mr. Mather and C. S. Eaton. The operating committee members are Mr. Griffith, Mr. Stuart, Mr. Fairless, Mr. Schlendorf and J. O. Eaton.

The regular quarterly dividend of 1½ per cent was declared on the preferred stock payable Oct. 1 to stock of record Sept. 20 and regular quarterly dividends of 50 cents on the common stock payable Oct. 11 to stock of record Sept. 28. The new blast furnace under construction at Massillon will be blown-in Sept. 23.

Smith Made President of Westinghouse Union

SWISSVALE, PA., Aug. 26—A. L. Humphrey, chairman of the board of Westinghouse Union Battery Co., has announced changes in the sales, engineering and executive organization.

C. H. Smith, vice-president and general manager, has been made president and general manager. D. W. Sousser has been appointed assistant to Mr. Smith.

Other promotions are J. K. Ross Dugan, manager of export, to vice-president of sales; J. L. Rupp, sales manager, to vice-president of engineering, and G. B. Cushing, assistant sales manager, to sales manager.

G. M. A. C. Net \$2,613,823

NEW YORK, Aug. 23—General Motors Acceptance Corp. reports net income of \$2,613,823 after taxes and charges for the six months ended June 30, 1926, equivalent to \$13.75 a share earned on the outstanding 190,000 shares of stock. This compares with \$917,067 or \$10.19 a share on 90,000 in first half of 1925.

Business in Brief

Written exclusively for AUTOMOTIVE INDUSTRIES by the Guaranty Trust Co., second largest bank in America.

NEW YORK, Aug. 25—Wholesale trade during the past week showed a definite upward trend, despite the conservatism which still prevails in trade circles because of uncertainty regarding the ultimate outcome of the crops. Commodity prices weakened, but the average of stock prices reached a high record.

Car Loadings

Car loadings in the week ended August 7 numbered 1,083,199, as against 1,102,590 in the preceding week and 1,052,518 in the corresponding period last year. Loadings since the first of the year total 31,364,930 cars, as compared with 30,326,099 cars in the corresponding period of 1925.

Crude Oil Output

The daily average output of crude oil in the week ended August 14 was 2,162,050 barrels, as compared with 2,141,250 barrels in the preceding week and 2,177,750 barrels in the corresponding period a year earlier. The price of crude oil and gasoline remained stationary last week except for small local changes.

Cotton Crop Report

The condition of the cotton crop on August 16 was reported 63.5 per cent. of normal. This represents a decline of 6.3 per cent. in condition and of 373,000 bales in the prospective crop from the figures for August 1. The estimated yield of 15,248,000 bales is 855,000 bales under the actual 1925 yield, but 909,000 bales above the forecast a year ago.

Commodity Prices

Fisher's index of wholesale commodity prices stood at 147.2 last week, which compares with 147.3 a week earlier and 149 four weeks earlier. Last week's average is the lowest for the year to date.

Bank Statements

Bank debits to individual accounts reported to the Federal Reserve Board for the week ended August 18 were 1.4 per cent below the total for the preceding week but 7.6 per cent above that of a year ago.

Bills and securities held by the Federal Reserve banks increased \$3,000,000 during the week ended August 18. Note circulation increased \$3,600,000 and deposits \$4,400,000 while reserve decreased \$2,400,000. The reserve ratio declined from 75.3 to 75.1 per cent.

During the same period, loans of reporting member banks decreased \$45,000,000, while investments increased \$8,000,000. Borrowings from the Federal Reserve banks declined \$7,000,000 and net demand deposits \$118,000,000.

Money Rates

Call loan rates last week stood at 4½ per cent, as against a range of 4¼ to 5 per cent in the preceding week. Time loan rates ranged from 4¾ to 4½ per cent, as compared with 4½ to 4¾ per cent in the preceding week. Commercial paper rates also advanced from 4 to 4½ per cent to a range of 4½ to 4¾ per cent.

Sleddon Joins Federal

LOS ANGELES, Aug. 23—William T. Sleddon, formerly sales manager of the American-La France Co. in Los Angeles, has been appointed sales manager for the Federal Motor Truck Co. of California, here. He succeeds K. J. Brown.

Motor Bus Engine Runs With Oil Fuel

ST. PAUL, Aug. 23—R. B. Hartsough in a motor bus test has demonstrated by a test run of 226 miles to Duluth that his principles applied to a four-cylinder tractor may be utilized on a heavy duty motor consuming furnace oil or even lower grade. A standard bus with a 50-gallon tank full of cheap distillate was used through a variety of weather, with normal stops and starts, operating 40 miles an hour.

The motor consumed 31 gallons of oil and 5.1 lb. of gasoline used to warm up the motor. The rate of fuel use was 7.15 miles to the gallon. Saving in fuel cost, considering the lesser volumetric requirements of oil, and difference in price compared with gasoline, was 60 per cent. Experts on the trip said there was perfect combustion, no sparking trouble, and no loss of compression.

The device is a unit of the motor consisting of intake and exhaust manifold and carburetor, substituted for the standard equipment and can be made part of any equipment. The carburetor is on top of the manifold. Complete consumption of the oil is the secret. Gasoline is employed only to start the motor and shift is made to oil fuel on the instrument board. The engine was sealed by Professor Frank B. Rowley of the University of Minnesota experimental engineering laboratories.

To Sell Beggs Assets

KANSAS CITY, Aug. 23—Stockholders in the defunct Beggs Motor Co. will be enabled to realize about 50 cents on the dollar through the sale of the assets of that company, according to an announcement made by Brown Harris, attorney for J. W. Beggs, receiver for the company. The Beggs company began the manufacture of motor cars here in

1917. It enjoyed profitable business in the middle-west during the war years and up to the deflation of 1922 and 1923, when the company went into receivership.

Marmon Net Increases to \$1,669,800 in Past Year

INDIANAPOLIS, Aug. 23—Net income of \$1,669,800 is reported by Marmon Motor Car Co. for the year ended July 3, 1926 after all charges, reserves and Federal taxes. This compares with \$1,442,898 for the previous fiscal year.

The company reports current assets of \$3,310,125 which includes cash of \$750,543, receivables of \$492,283 and inventories of \$2,016,028. Current liabilities total \$832,282. Current assets a year ago were \$4,370,922 and liabilities, including bank debt of \$1,888,000, totaled \$2,978,030. The balance sheet shows surplus of \$2,137,554 and funded debt of \$750,000.

Miller Profit \$744,101 in First Half of Year

AKRON, Aug. 23—The semi-annual statement of the Miller Rubber Co., shows profits for the first half of this year were \$744,101 after Federal taxes and depreciation, amounting to \$577,925. This is equal after preferred dividends to 95 cents a share on the 260,089 shares of common stock, against \$8.31 a year ago. The shrinkage in the price of rubber helps to account for the decline in earnings, it was reported, while there was an increase of about 16 per cent in the volume of business over the same period a year ago. Plants are reported running at full capacity, and it is expected they will continue at this rate for the balance of the year, with stocks low on dealers' hands and the demand for tires increasing.

For all of 1925 the company reported net earnings of \$3,533,201.

Ford to Grow Hemp on Ohio Farm Lands

SPRINGFIELD, OHIO, Aug. 23—Henry Ford will start a 2200-acre hemp farm at South Charleston, south of here next year the purpose being to use the product in upholstery for Ford cars. Representatives of the Detroit automobile manufacturer have notified his tenants on the land in question to vacate by March 1, 1927. Agricultural experts declare this to be the only commercial project of its kind in the middle west.

Twenty-three tractors for Spring delivery have been ordered and other machinery to process the fibre will be ordered later, it is understood. Employees will work in the fields in summer and in the factory in the winter.

The land is on the Detroit, Toledo & Ironton railway owned by Ford and was purchased that the line might be straightened. It was generally believed Ford would establish a tractor plant there until the hemp plant was announced.

Yellow Truck Shows Gains

CHICAGO, Aug. 23—Yellow Truck & Coach Mfg. Co. reports net profit of \$1,515,229 after all charges and Federal taxes, for the six months ended June 30. This is equivalent after dividend requirements on preferred stock to \$1.65 a share on the outstanding 600,000 shares of class B stock. Net profit for the second quarter of 1926 was \$934,763 or \$1.12 a share on class B stock as against 52 cents a share in the preceding quarter.

July Star Net \$219,985

NEW YORK, Aug. 23—Earnings of the Star car division of Durant Motors, Inc., for July were \$219,985 after all charges and Federal taxes, according to report by Colin Campbell, vice-president. June earnings were \$511,656.

Developments of the Week in Leading Motor Stocks

NEW YORK, Aug. 25—Prices shifted aimlessly on the New York Stock Exchange during the past week, as the market struggled under the conflicting influences of professional traders ready to follow a preponderance of either buying or selling orders. The motors followed this irregular trend and although they covered a wide range, there was little marked change in prices and certainly no definite indication of a trend in either direction.

General Motors again led the group in point of activity and range of fluctuation. In fact, this stock continued to hold the center of speculative attentions as it has for many weeks. Under the influence of news which indicated that a new high monthly record in sales would be established in August, the stock advanced to the highest prices at which it has sold since the 50 per cent stock dividend was declared. While the stock is ex a cash dividend of \$2.62½, the Stock

Exchange has not yet set a date on which it will sell ex stock dividend. When this occurs the stock will sell for two-thirds of the price for the present stock.

Although substantially higher prices for Hupp Motor were predicted on the basis of its bright prospects in sales and earnings, the stock did very little during the past. It is understood that some favorable action for stockholders will be taken at the annual meeting Sept. 8, with reports in the financial district forecasting both a small stock dividend and an increase in the cash rate.

Pierce-Arrow announced the nucleus for a plan for simplifying the corporation's capital structure by retiring the bonds and paying off the accumulated dividends on the preferred stock. Common stock will be sold at a price approximating current market prices to provide the funds for retirement of the bonds, and a new issue of second preferred stock will be created to take care of the back

dividends on the preferred amounting to \$4,000,000. The preferred stock has scored a sharp advance to above 125 but is still considered speculatively attractive in view of its earnings and dividend. When the preferred dividends are paid the stock will be selling \$30 to \$40 a share lower than present prices and at around 90 would show an attractive yield on its \$8 dividend.

A sharp decline in Hayes Wheel was a feature of the week's movement in the accessory issues. Responding to an unfavorable earnings report for the first six months of the year, the stock sold off several points on reports that the dividend was endangered by the fact that the company had not earned its full dividend in the first six months. As the cash position is still strong, no fear over the present safety of the dividend is felt in responsible quarters.

The rubber stocks held firm at around the previous week's prices.—E. S.

Industry Maintains Sheet Steel Buying

Price Increases on Lighter Sheets Seen Following Base Gage Change

NEW YORK, Aug. 26—A note of caution, on the part of producers as well as consumers, is evidenced as the steel market approaches the end of the summer season. Automotive demand for cold-finished steel bars, strip-steel, and sheets is well maintained, but alloy steel mills complain at the backwardness of business which waits upon the marketing of new models of medium and higher-priced motor cars. Proposed reduction of the base gage for black sheets from No. 28 to No. 24 will increase the price of lighter gages by from \$3 to \$7 a ton, mills having contended right along that they are losing money on light-gage sheets at prevailing prices.

The market for full-finished automobile sheets is firm at 4.20, Pittsburgh or Youngstown, for No. 22 gauge. Talk of higher prices persists. It is interesting to note that in engineering circles the prediction is made that the automotive industries will eventually become large consumers of electrolytic iron, and that it will be competitive in price with ordinary steel, especially so in sheet form. Its use for automobile mufflers is especially emphasized. Electrolytic iron is now being produced commercially, but on a relatively small scale, research and development being still most important objectives.

Pig Iron—Small lot buying by automotive foundries continues, the market having become more settled and an undertone of firmness being in evidence.

Aluminum—While the London market is cabled nominally at £118, which is the price of the British producers, curtailed consumption resulting from the coal strike is known to have brought about considerable accumulation of Continental metal that is being offered at £115. The market for virgin metal here is steady. Remelted metal rules easy, there being an abundant supply of scrap offered in the Detroit and Cleveland markets.

Copper—The market has quieted down. Connecticut manufacturers of automotive brasses and wire drawers are well covered. Some producers fear that greater output resulting from the impetus given to copper mining by better prices will again jeopardize the market.

Tin—Consumers are fairly well covered and await breaks in the market before buying.

Lead—Deliveries on contract run heavy, but new business is light. The market is quiet and unchanged.

Zinc—A somewhat better tone is noted. Prices have hardened.

Artificial Leather Gains

WASHINGTON, Aug. 26—Manufacturers of artificial leather, who sell 69 per cent of their product to the automotive industry, report to the Department of Commerce in the 1925 biennial census of manufacturers, products valued at \$40,931,682, an increase of 22 per cent as compared with 1923, the last preceding

census year. Of this amount \$30,673,444 was contributed by pyroxylin-coated artificial leather and \$5,116,570 by all other kinds of artificial leather. Of the 18 establishments reporting for 1925, 7 were located in New Jersey, 5 in Massachusetts, and the remaining 6 in other States.

Fageol Brings Out Light Truck Model

SAN FRANCISCO, Aug. 24—The Fageol Motors Co. has placed on the market here a new truck, intended for use in the light truck field, but really of heavy-duty design. The truck, to be known as "Fageol Flyer," is offered in one to two or more ton capacity.

The new truck is powered with a Waukesha 4x5 in. four-cylinder engine. Ignition is by Robert Bosch magneto and American Bosch starting and lighting. Transmission is Brown-Lipe. Timken axles are used, the rear being full floating, bevel-gear, type, and the front being I-beam drop-forged.

Quarter-inch pressed, heat-treated nickel-steel, with five-inch well and three-inch flange, forms the frame, which rests on springs of chrome vanadium. The front springs are 37x2.5 in., and the rear 56x3 in. There are six leaves in the front springs and 9 in the rear.

The steering gear is a Ross cam-and-lever. Comfort of the driver is looked after by a well cushioned seat, and an all-metal cab arrangement, including two-piece windshield, quick-adjustable side curtains, and full touring-car upholstery in genuine leather.

The front wheels and the rear dual-wheels are Budd disk, equipped with 30x5 in. cord tires. A spare wheel on a carrier is standard equipment.

Wheelbase is 156 in., allowing 10 ft. back of the cab to the end of the frame which has a width of 34 in. The rear axle is set 33 $\frac{1}{4}$ in. from the end of the frame, to give better distribution of load. The top of the frame is 26 in. from the ground, giving a low center of gravity.

Truck-Bus Supervision Intimated by I.C.C. Head

NEW YORK, Aug. 20—Supervision of motor buses and trucks engaged in interstate transportation may be exercised in future by the Interstate Commerce Commission, John J. Esch, member of the commission and joint author of the Esch-Cummins Railroad bill, declared here today. Mr. Esch declared that the American public's investment in automobiles is now as great as investments in railroads and motor transport therefore cannot be classed any longer as an infant industry.

The railroads, he said, have been quick to appreciate the importance of motor transportation and have averted losses by going into the business themselves. The Great Northern railroad has organized a \$2,000,000 corporation which is now doing as heavy a motor bus business as any of the operators of the northwest.

Flint Prices Lower With Plant Transfer

Reductions Range From \$25 to \$300—Monthly Discount Plan Effective

NEW YORK, Aug. 24—The Flint Motor Co. has made price reductions in its lines running from \$25 to \$300. The company announces that transfer of manufacturing operations from Flint, Mich., to the Durant plant in Elizabeth, N. J., makes the cuts possible through increased manufacturing facilities, more efficient production methods and reduced factory overhead costs. Prices follow:

	New	Old
Coach	\$960	\$1085
DeLuxe coach	1075	1185
Model 60		
Touring	1260	1285
4-pass. roadster	1360	1395
Brougham	1450	1525
Sedan	1495	1525
4-pass. coupe-r'dstr ..	1495	1495
4-pass. sport-r'dstr ..	1495	1525
Model 80		
Touring	1450	1595
4-pass. sports-tour ..	1645	1945
4-pass. roadster	1645	1945
4-pass. coupe	1850	2045
Sedan	1925	2195
7-pass. sedan	2125	2395

A new discount plan was also put into effect Aug. 20 under which all cars bought by dealers are billed at a standard base discount. If during any month purchases exceed a stated minimum an extra discount for that month is earned, the amount of the extra discount depending on the total number of cars purchased during that month.

Autocar Adds New Models to Present Line of Trucks

PHILADELPHIA, Aug. 23—Following a two-day conference of branch managers at the Ardmore factory, the Autocar Co. announced several additions to its line of motor trucks.

President L. L. Woodward in making the announcement stated that the company will not reverse nor abandon the policy of "engine under the seat" design which it has followed for years. He pointed out that this design has the great advantage of giving the truck a short wheelbase and a consequent ease in handling in modern traffic. The new models will be additions and not replacements, he said.

An addition is a delivery car which, according to the company announcement, is of "conventional design and smart appearance." All additional models will be made entirely in the Autocar factory and will have the same four-cylinder motors, the same transmission and the same rear axle.

Bridgeport Brass Moves Office

NEW YORK, Aug. 20—The New York office of the Bridgeport Brass Co. has been moved from the Pershing Square Building to the Farmers Loan & Trust Co. Building, 475 Fifth Ave.

BIGGEST TIRE MONTH PREDICTED IN AKRON

Factories Working at Full Speed to Handle Orders From Dealers

AKRON, Aug. 24—On the basis of current business, August will be the biggest month in unit sales and production of automobile tires in the history of the industry, according to leading rubber manufacturers here. The month's business will far surpass records hung up in the meteoric boom period of 1920.

Demand from dealers all over the country has been so heavy since the recent tire price cut, which marked the end of the "buyers' strike," that it appears William O'Neil and Jacob Pfeiffer were not far wrong in predicting two months ago a possible tire shortage in the latter part of this year.

In the Akron district production has been increased within the past few weeks to more than 130,000 tires a day, compared with less than 100,000 earlier in the year. Before the end of the month total output may reach 135,000 casings a day, it is stated.

3,500,000 Output Seen

Akron authorities estimate that August production will total close to 3,500,000 tires, against about 2,800,000 three months ago.

The so-called "Big Five" group of manufacturers, including Goodyear, Goodrich, Firestone, Miller and General, are alone producing approximately 114,000 tires a day.

Among the medium-sized and smaller companies, Seiberling, Mason, Mohawk, India, Star, American and others are running their plants at full capacity. These companies are manufacturing in the aggregate more than 15,000 casings a day.

Estimates place the movement of tires through dealers during July at better than 5,000,000. Figuring dealer sales the first six months at 14,500,000, compared to 19,500,000 the first half of 1925, dealers will have to move 21,000,000 casings between July 1 and Dec. 31 to reach the 36,000,000 mark, which manufacturers claim is a fair estimate over 1925 business of 33,000,000 casings. This 1926 quota takes into account the increased repairing and retreading of tires and the heavy use of spare tires.

NEW JERSEY SALES STILL BETTERING 1925 FIGURES

NEW YORK, Aug. 24—Sherlock & Arnold's report of new car sales in New Jersey shows a total of 10,002 in the 21 counties for July, 1926, as compared with 8161 in the same territory for July, 1925 and a grand total of 71,808 for the first seven months of this year as against 53,327 for the first seven months of 1925.

June, 1926, totaled 11,036 against 10,017 for June, 1925, while May, the peak

month this year, compares its total of 13,406 with only 9204 in May, 1925. While May was the peak month this year, the top position was taken by June, in 1925, which exceeded the succeeding month that year by almost 1000 cars.

Commercial cars and trucks showed a substantial gain this month with July, 1926 totaling 1605 against 1461 for July, 1925.

SEWER VOTE CHECKS G. M. C. FLINT PLANS

FLINT, Aug. 23—Failure of Flint voters to approve a tax of \$220,000 to build a trunk line sewer on the south side of the city has caused the General Motors Corp. to announce that it will delay the development of the former Flint Motor Co. plant for a Fisher Body factory.

Harry H. Bassett, president and general manager of the Buick Motor Co., and a vice-president of General Motors Corp., who announced the change of policy, expressed his disappointment and that of Alfred P. Sloan, Jr., president, at the failure of Flint citizens to approve the tax.

The announcement has stirred 30 civic organizations to action. They are circulating petitions to re-submit the proposition at the earliest possible date. The petitions will be placed before the common council, and, indications are that necessary legislation will be speeded up as much as possible to insure the new factory for Flint.

OSTERLOH RESIGNS AS HEAD OF CALIFORNIA GOODYEAR

LOS ANGELES, Aug. 24—A. F. Osterloh, who has been prominently identified with the industrial development of Southern California, has announced his resignation as president and general manager of the Goodyear Tire & Rubber Co. of California and the Goodyear Textile Mills. He has been succeeded as vice-president by H. E. Blythe, who will also continue as general superintendent.

Mr. Osterloh says that he later expects to reenter business in Southern California, although he has not determined in what direction his activities will lie. He began with the Goodyear Tire & Rubber Co. of Akron as a salesman twenty-four years ago, and advanced through various offices until he became secretary of the company. Following the organization in 1919 of the two subsidiary companies in Southern California, he came to Los Angeles as the executive head of both companies.

PETERS WITH GENERAL BODY

DEFIANCE, OHIO, Aug. 24—W. F. Peters, for the last 10 years with the sales department of the White Co., has resigned to become sales director of The General Body Co., of Defiance, which is enlarging its facilities to produce cabs and truck bodies in addition to its "Miller Built" bus bodies.

RUBBER RESTRICTION SEEN AS INEVITABLE

HENDERSON SAYS CURRENT MARKET WILL LEAD TO 20% CUT BY NOV. 1

NEW YORK, Aug. 24—All indications are that the British government will put into effect the 20 per cent reduction in the export of crude rubber Nov. 1, F. R. Henderson, president of the New York Rubber Exchange, said today. Mr. Henderson returned yesterday from England on the White Star liner *Celtic*.

"I am convinced that the British government is interested only in attempting to stabilize the rubber market," said Mr. Henderson, "and to insure a fair return to its Colonial rubber growers as well as a fair price to consumers."

Mr. Henderson said that in view of the current price of crude, and the amount being purchased, the institution of the Stevenson restriction provisions is inevitable at the end of this quarter. He advised that any ill feeling toward the English on this score be forgotten and expressed the opinion that the rubber restriction is not directed against American consumers specifically.

"I think America has got to look and see where her rubber can be produced and have laws changed in the Philippines to make it practical for American capital to grow rubber there," he said. "That is the only place where we can grow rubber under the American flag. The problems of limited rubber acreage that United States operates are allotted in the Philippines under the present law, also the labor question may be determined in the future, and if necessary we may be able to import Coolie laborers."

SPRINGFIELD SPRING CO. BUYS ARMSTRONG PLANT

SPRINGFIELD, OHIO, Aug. 23—Purchase of the plant of the Armstrong Mfg. Co. by the Springfield Spring Co. has been announced by Ralph N. Thatcher, manager of the latter company. The consideration was not made public.

The plot of ground acquired is adjacent to the plant of the Spring company and is 400 x 250 ft. There is a building on the tract 150 x 150 ft. Possession of the property will be given Jan. 1. The property was acquired for expansion purposes. The Springfield Spring Co. manufactures coil springs for agricultural implements and automobiles.

SLIGHT FATALITY GAIN

WASHINGTON, Aug. 26—A total of 497 automobile fatalities for the four-week period ending Aug. 14 occurred in 78 large cities in the United States, it is announced by the Department of Commerce. This is comparative with 467 fatalities for the corresponding four weeks of 1925. The daily average for the two four-week periods were 17.8 and 16.7 respectively.

G.M. Sales to Make New Monthly Record

Sloan Says August Demand for All Models is Setting Precedent

NEW YORK, Aug. 24—A new monthly sales record probably will be established by General Motors in August, according to Alfred P. Sloan, Jr., president of the corporation. He said that all divisions are again operating at capacity following the slight mid-summer decline due to preparation for new models.

"Since the introduction of improved models by Chevrolet, Buick, Cadillac, Oakland-Pontiac and Oldsmobile," said Mr. Sloan, "the demand for our cars has broken every precedent. Sales in August are expected to exceed 130,000 cars and present indications are that the current high rate will continue at least until October. August will set a new monthly record, comparing with sales of 76,462 cars in the same month last year and with 87,643 cars in July. The previous record month was in April, 1926, when 122,742 cars were sold.

"For the first time in our history, the corporation's monthly sales exceeded the 100,000 car mark in March of this year and four out of the first six months of the year we sold more than 100,000 vehicles monthly. In July sales were somewhat lower, due to preparations for our improved models, but operations have again been restored to a capacity basis. I do not look for any material falling off for the next three months, which is as far ahead as it is safe to predict. At the moment, every General Motors division is oversold."

Distribution to Feature Electric Group Meeting

CLEVELAND, Aug. 25—Problems connected with the distribution of parts and accessories will hold the center of the stage at the annual meeting of the Automotive Electric Association to be held Sept. 13-16 inclusive at Buckwood Inn, Shawnee-on-Delaware, Pa. In addition to a full representation of the manufacturer members of the association, a number of the leading distributor members of the Field Division are expected to attend.

Following meetings of the patents and standardization committees on Monday, all of Tuesday will be devoted to analyzing distribution problems and discussing methods of solving them. There will be another general session on Wednesday at which the program for the 1927 Chicago meeting of the Field Division will be discussed. The convention will close on Thursday with reports from committees.

Moon Opens Retail Branches

NEW YORK, Aug. 24—G. M. Howard, branch manager in charge of New York territory for Moon Motor Car Co., announced today the opening of a factory retail sales branch at 1806 Broadway and

242 West 59th Street. Mr. Howard said that this was a continuance of the company's policy of establishing active retail branches which went into effect in March of this year.

The company has been operating on this basis in Philadelphia, Chicago, Atlanta, Kansas City and San Francisco since that time.

General offices, wholesale and service departments remain at 109 West 64th Street.

Peerless Net Gains

Earnings for Second Quarter Total \$694,336 After Charges

CLEVELAND, Aug. 25—The Peerless Motor Car Corp. reports net incomes for the quarter ended June 30 as \$694,336, after all charges, including depreciation and taxes. This is equal to \$3.04 a share earned on 228,589 shares of stock.

Earnings for the quarter more than doubled those of the same period last year which totaled \$327,234, or \$1.43 a share.

Sales for the second quarter were 4437 cars, compared with 2620 in the first quarter. The total for the half is 7057, which exceeds the 6367 cars sold during the entire year of 1925.

States to Discuss Ending of Mid-West Truck War

FORT WAYNE, IND., Aug. 24—at a meeting in Indianapolis September 2 officials of Indiana, Illinois, Ohio, Tennessee and Kentucky will endeavor to settle an automobile license war between the other mid-western states and Kentucky.

Kentucky has passed a license law requiring Indiana trucks operating in that state to take out Kentucky licenses. The law also affects Ohio, Illinois and Kentucky trucks. Reprisals will prevent Kentucky business firms from operating cars in adjoining states unless an amicable settlement is reached. Automotive associations of Indiana are urging support of surrounding states to control the situation.

Set Good Roads Week

WASHINGTON, Aug. 26—The American Road Builders' Association has set aside the week of January 10th to 14th, 1927, as National Good Roads Week, it is announced here. At that time all schools of the United States will be invited to take part in reviewing the progress in road construction, and in studying the traffic conditions in general, as well as the benefits derived from good roads. The week will be climaxed among these schools by the announcement of the winners of a national essay contest conducted by the association.

Gabriel Pays Extra

CLEVELAND, Aug. 26—An extra payment of 62½ cents a share in addition to the regular quarterly dividend of the same amount has been declared by the directors of the Gabriel Snubber Mfg. Co.

Pierce-Arrow Offers Stock Change Plan

Would Retire Bonds by Issue of Common and Settle Back Dividends

BUFFALO, Aug. 23—A special meeting of the stockholders of Pierce-Arrow Motor Car Co. has been called for Sept. 10 to increase the authorized common stock from 328,750 shares, all of which are outstanding, to 600,000 shares, and to create 40,000 shares of second preferred stock.

Myron E. Forbes, president, said: "It is expected at the proper time to offer most of the additional common shares, giving each holder of two shares of present common the right to subscribe to one new share and devote the proceeds to the retirement of \$3,950,000 8 per cent debentures outstanding. The other issue of 40,000 shares of second preferred stock will be convertible into 2½ shares of common stock and will be entitled to cumulative dividends of not exceeding \$7 a share and callable at not exceeding \$102.50 plus accumulated dividends. The second preferred will be used to liquidate the \$4,000,000 of arrears of dividends on the company's present preferred stock.

"When the plans are carried out, the company will have no bonds outstanding and its capitalization will consist of \$10,000,000 of 8 per cent preferred stock, \$4,000,000 of second preferred stock and 500,000 shares of common, or, if the second preferred stock is converted, of 10,000,000 of 8 per cent preferred stock and 600,000 shares of common."

Boost Graham Output

EVANSVILLE, Aug. 23—Graham Brothers new two-ton truck has been the biggest factor in boosting production at the local Graham Brothers plant to the highest level in its history—80 trucks a day—according to J. W. Evans, plant superintendent. Graham Brothers latest model is claiming about one-fourth of total production.

Dodge Brothers and Graham Brothers division executives will meet here early in September to outline plans for the new year.

Johan Expanding Plant

EVANSVILLE, Aug. 23—The Johan Mfg. Co., commercial car body builders, has erected a one-story brick warehouse building, 36 ft. by 100 ft., on the plant premises for the storage of commercial car bodies. The plant is building six special bodies a day, William Johan, manager, announced. Plans are being considered for further expansion of the plant.

Moon Makes Light Bodies

ST. LOUIS, Aug. 25—The Moon Motor Car Co. is making ready to manufacture closed bodies for its new light six model. The plant formerly used by the Moon Brothers Mfg. Co. is being adapted for body manufacture use and will furnish 600,000 sq. ft. of floor space.

Men of the Industry and What They Are Doing

New Chandler-Cleveland Sales Personnel Named

Chandler-Cleveland Motors Corp. has made announcement of a revised personnel in sales, advertising, publicity and service activities. Sid Black, vice-president, is in full charge of sales, service and advertising for the corporation.

The sales department is headed by Ralph B. Nettleton, western sales manager; Frank E. Connor, eastern sales manager, and Harrison Goldsmith, southern sales manager.

H. W. Fortey is in charge of sales promotion work; R. A. Lammers heads the advertising department, working directly under Mr. Black; P. A. Bennett is publicity manager, and J. T. Nicholson is service manager.

Day Joins Durant Motors

George H. Day, who was vice-president of the Central Star Automobile Co., Boston representatives for the Star line, has sold his interest in the company to his partner, Alfred H. Sowers, and is now directing sales branches for Durant Motors, Inc., at New York. He has been sent to Boston to work at the Flint branch temporarily.

Marr to Succeed Lakin

John R. Lakin, for some years manager of the New England district for the Durant Motors, Inc., handling Star and Flint lines, is to resign Sept. 1 and Frank Marr, who has been his assistant will be promoted to the management.

Marshall Moved to Pontiac

Consolidation of engineering departments of the Yellow Sleeve Valve Engine Works at the Pontiac factory will mean transfer of 15 employees from the local plant late this month to join groups from the Chicago and Pontiac plants at the latter factory. Among those transferred from here will be Alex Marshall, chief

of the experimental department, who will occupy a similar position in the Pontiac plant. Mr. Marshall joined the old Root & VanderVoort Co. in 1912, coming from England, where he was instrumental in perfecting the Daimler engine.

Johnston Assists Campbell

T. S. Johnston has been named assistant to Vice-president Colin Campbell, of Durant Motors, Inc., in charge of Flint sales policies. He will continue supervision of the New York Flint branch, in addition to working with Mr. Campbell in developing of Flint business throughout the country.

Walter Joins Peerless

Harry A. Walter, who has been associated with various General Motors units for some years and for the last three and one-half years has been special representative for the Flint Motor Co., has been appointed special sales representative for the Peerless Motor Car Corp.

Stetson With X-Laboratories

Carlton B. Stetson has been appointed advertising manager of X-Laboratories, New York, succeeding P. M. Southworth. Mr. Stetson was formerly advertising manager of the Moto-Meter Co., Inc., Long Island City.

Nenke New England Manager

R. O. Nenke has been appointed New England district manager for the Gardner Motor Car Co., and has opened his headquarters at the salesrooms of the Frank P. Anthony Co., Boston distributors.

W. S. Jones Joins Carpenter

W. S. Jones has been elected vice-president of the Carpenter Steel Co. at Reading, Pa., where he will be in charge of tool steel sales.

for production of the gray iron castings required in its plant and permit doubling of production capacity with proportionate increase of working forces.

Jordan Tool Adds Unit

MINNEAPOLIS, Aug. 20—The Jordan Machine Tool Co., maker of Jiffy-Jordan cylinder regrinding tools, has announced plans for an addition to its plant which will be used in the manufacture of pistons. The unit is expected to be ready for occupancy in 60 days.

National Leases Factory

NEW YORK, Aug. 21—A factory building at Irvington, N. J., has been leased for a long term by the National Motor Mfg. Co., which recently took over the interests of the Day-Elder truck concern.

F. H. Williams Appointed G. M. Truck Executive

F. H. Williams, who recently resigned as manager of the Philadelphia district for the White Co., has been appointed assistant to the vice-president and sales director of General Motors Truck Co. For the present he will be located at the Philadelphia office where he will look after sales development in this territory and in the eastern section of the country. Mr. Williams was formerly a vice-president of the White company, resigning this position about five years ago to take over the Philadelphia territory for the company.

Fiat Director Sails

Count Eugenie Rebaundengo, director of the Fiat Automobile Co., Turin, Italy, who has been in the United States studying American industrial methods, has sailed for home. Modern production methods of American factories greatly impressed him and he expressed the belief that the world would profit industrially if various countries copied American organization and standardization in industry.

Brosseau Confers With Coolidge

A. J. Brosseau, head of Mack Trucks, Inc., discussed business conditions with President Coolidge at White Pine Camp last week. Mr. Brosseau was optimistic over the outlook in the automobile industry, which he described as very satisfactory.

Riordan Becomes Manager

William A. Riordan is manager of the New York fire department of the Automobile Insurance Co., 100 William St., today. Vice-President Alfred Stinson announced that William S. Hart, whom Mr. Riordan succeeds, will assume duties at the home office in Hartford.

Monobloc Increases Output

CLEVELAND, Aug. 23—The Monobloc Co., manufacturer of rubber composition battery boxes, has now equipped its plant for production on a basis of 15,000 daily. The company manufactures its product almost entirely by machinery which makes the high production possible.

Sets New Motorcycle Mark

SALEM, N. H., Aug. 21—Curley Frederick, of Denver, created a new world's record for motorcycles when he rolled around the Rockingham Speedway here this afternoon doing a lap at 37 2/3 seconds or at the rate of 120.3 miles per hour. He was riding an Indian. This was the first time that anyone had ever exceeded a rate of more than two miles a minute for a motorcycle in competition.

Deere Expands Foundry

MOLINE, ILL., Aug. 21—Contracts were let this week by Deere & Co. for a new foundry and cupola which represent the first step in the expansion and improvement of the foundry facilities of the John Deere Plow Works. The new foundry will give Deere & Co. facilities

Financial Notes

Fisk Rubber Co. for the quarter ended July 31, 1926, shows net profit of approximately \$1,500,000 after depreciation, interest and Federal taxes, equivalent, after allowing for dividends on preferred stock to \$1.37 a share on 811,827 no par shares of common stock. This compares with \$3,945,000 or \$4.51 a share on 796,882 shares of common stock outstanding in quarter ended July 31, 1925. Net profit for nine months ended July 31 approximated \$3,624,593 or \$3.06 a share on common stock, compared with \$5,930,000 or \$6.12 a share on common in the corresponding period of the preceding year. For the quarter ended July 31, net sales were approximately \$21,500,000, comparing with \$24,579,000 in the July 31 quarter of 1925. Total sales for the first nine months of the fiscal year were \$49,917,000 against \$54,300,000 for the corresponding period a year ago.

E. I. duPont de Nemours & Co. declared a quarterly dividend of 3½ per cent on the common, placing it on a 14 per cent basis, compared with the previous annual rate of 10 per cent. A meeting of stockholders was called for Sept. 13th to vote on a proposal to change the authorized common stock from 1,500,000 shares at \$100 par value to 5,000,000 shares without par value. Each share of common now outstanding is to be exchanged for two shares of the new no par common, which would increase the number issued and outstanding from 1,330,829 to 2,661,658 shares. The regular quarterly 1½ per cent on the debenture stock also was declared.

Chrysler Corp. and subsidiaries net profit for six months ended June 30, 1926, was \$7,846,744 after charges and Federal taxes, equivalent after dividends on \$8 preferred stock to \$2.58 a share earned on 2,705,098 no par shares of common stock. Consolidated statement of Chrysler Corp. and subsidiaries as of June 30, 1926, shows total assets of \$89,037,505, comparing with \$71,423,179 as of June 25, 1925, and profit and loss surplus \$16,399,210 against \$6,070,667. Current assets on June 30, 1926, totaled \$37,824,207 and current liabilities \$11,565,722.

Intercontinental Rubber Co. and subsidiaries for the six months ending June 30, 1926, shows a net profit of \$612,067, after depreciation, Federal taxes, etc. This is equal to \$1.03 a share earned on outstanding 596,004 shares of no par stock. The consolidated balance sheet of June 30, 1926 shows current assets of \$3,243,646 and current liabilities of \$274,761. The company had more than \$2,500,000 in cash and out on call loans.

Stewart-Warner Speedometer Corp. and subsidiaries report net profit of \$3,121,815 for the first six months of 1926 after expenses, discounts, depreciation and Federal taxes. For the June quarter profit was \$2,022,731. After dividends of \$1,816,995 profit and loss surplus was \$6,408,159. Net income in the first six months of 1925 was \$3,466,912.

Illinois Registrations Up

CHICAGO, Aug. 21—Indicating a quite popular tendency on the part of June's new car buyers to wait until July before buying license plates to save half the year's fee, registration totals for Illinois in July show an increase of 22 per cent over June's total. The tabulations which were compiled by Robinson's Advertising Service, Springfield, Ill.,

credit July with 24,879 new car sales against 20,327 for June, although it is generally agreed that actual sales in July were less than the sales in June. Ford is credited with 8324 registrations in July or 33 per cent of the total as against 31 per cent of the total for both June and July. Ford's June registration is given as 5884.

Firestone to Speed Liberian Plantation

AKRON, Aug. 23—The Liberia rubber plantation project of the Firestone Tire & Rubber Co. will be speeded up this fall, following the arrival there of Harvey S. Firestone, Jr., son of the rubber magnate about Sept. 20, it is learned here.

The younger Mr. Firestone and wife sailed Aug. 21 from New York for London, where headquarters of the Firestone Plantations Co., Ltd., have been established. In London he will be joined by M. A. Cheek, plantation expert, who will accompany him to Monrovia, capital of the new rubber growing Republic, and base of the Akron company's operations. Mr. Cheek, who left here two weeks ago, was in charge of Firestone's Singapore headquarters for 15 years.

A survey will be made of work already accomplished in Liberia, and plans will be made for future development. Mr. Firestone will spend about six weeks there. He will supervise the installation of new machinery, to be used in laying out new plantations on the 1,000,000 acres under lease by Firestone from the Republic. Donald A. Ross is superintendent of operations.

Approximately \$100,000,000 is to be spent on the Liberian project within the next five or six years, according to original plans announced by Harvey S. Firestone, Sr. Small quantities of rubber are now being shipped to Akron from a plantation which has been under cultivation there for several years.

N. J. Legislator to Seek Separate Bus-Truck Roads

TRENTON, N. J., Aug. 21—Separate highways in New Jersey for exclusive use of big motor buses and freight trucks will be advocated in a bill to be presented to the next legislature as a means of conserving the present road system. Assemblyman W. H. Olden is its sponsor.

Announcing his plans, Mr. Olden said it was never intended that the present highways should be usurped by enormous vehicles for commercial purposes which are crowding all other forms of traffic off the roads.

"It may be that there is a necessity and there probably is, for the new methods of transportation afforded by trucks and buses," Mr. Olden said. "I am going to take this question up at the next session of the legislature and will ask the co-operation of all automobilists, business men and manufacturers, who are interested in the preservation of the highways.

M.A.M.A. Sees Gain in Autumn Business

August Sales Hold to July Level—Original Equipment Buying Steady

NEW YORK, Aug. 23—July and August business in the automotive parts and accessory field showed a substantial decline from the June levels, according to the Motor & Accessory Manufacturers Association. The volume of shipments was also slightly below July, 1925, though the record of the first seven months of this year was better than the same period last year.

Preliminary reports of August business indicated a turnover equal to and perhaps exceeding the July figures. All indications in the industry pointed to a steady upturn in production and sales through September and October.

Compilations by the M. & A. M. A. of reported shipments by a large and representative group of members showed the July volume at an index figure of 133 as compared with 141 in June, 151 in May and 161 in April, the basis of 100 being the January, 1925, figure.

Shipments of parts and accessories to car and truck manufacturers in July were 135 per cent of January, 1925, as compared with 140 per cent in June, 145 per cent in May and 160 per cent in April.

In shipments to the wholesale trade the July aggregate of replacement parts was 117 per cent of January, 1925, as compared with 135 per cent in June and 177 per cent in May. Accessory business was 127 per cent as compared with 140 per cent in June and 183 per cent in May and the volume in repair shop machinery and tools was 142 per cent as compared with 184 per cent in June and 175 per cent in May.

Parts and accessory makers, according to the association, share with business men, government officials and economists the opinion that the foundation of the country's prosperity is sound and that a spirited increase in turnover of automotive products may be expected throughout the fall.

Ford Ship Takes Cars to Branches in Orient

DETROIT, Aug. 20—The first of the Ford Motor Co. fleet to circle the world is now on the Pacific Ocean on the first leg of the journey. It is the Motorship East Indian loaded with Ford parts sufficient for the complete assembly of 2500 Ford cars and trucks and designated for delivery to the Ford plant in Yokohama, and to service plants in Manila and Shanghai. It left New York on July 13, and, at Cuba took on 7000 tons of sugar for delivery at Takao, Formosa.

The ship refueled at Los Angeles, Aug. 14. After delivering the cargo the ship will return with raw materials for use in the Ford factories.

Laud Motor Service at I.C.C. Hearings

Federal Legislation Urged by Many, But Truck Owners Are Opposed

LOS ANGELES, Aug. 24—Various phases of support and opposition to the proposed Federal regulation of motor trucks and buses engaged in interstate commerce were presented by witnesses at the three-day hearing in Los Angeles held by a board representing the Interstate Commerce Commission. The local hearing was the fifth of thirteen to be held throughout the nation with a view of recommending Congressional legislation, and was attended by hundreds interested in motor bus and truck problems.

The general concensus of those who testified for the motor coach carriers was that motor transportation meets the needs of the public and its frequency and flexibility of service is necessary to the development of communities. It was also agreed by the majority of witnesses that since motor transportation has been regulated in California the operators have been benefitted by a stabilization in the industry. Also, that the profit to the general public has been increased in service and guarantees of dependability.

Sees Legislation a Boon

The need for Federal legislation was stressed especially by F. D. Howell, vice-president and general manager of the Motor Transit Co., of Los Angeles, and chairman of the committee of 21 appointed by the California Railroad Commission to draft new legislation covering the motor transportation operators. Mr. Howell declared that the general effect of regulation is to put the motor transportation industry into the hands of strong and reliable companies, which results in a centralization and the building up of communities and their particular industries. As an explanation, he said that many ranches not served by railroads have been subdivided and are now thriving communities since the coming of bus travel. The phenomenal growth of bus and truck lines, he said, result from the fact that they give service which the railroads cannot meet.

Rex Boston, secretary and manager of the Truck Owners Association of Southern California, representing several hundred operators, flatly opposed Federal regulation on the ground that the time has not yet come when it is necessary.

Boston suggested that the State hold control of interstate commerce until the motor lines have become serious competitors of the railroads. He said that at present truck operators are not competing with the railroads, the trucks being merely feeders; also that truck operations are limited, and not so successful in interstate business.

Shippers Favor Regulation

PORLTAND, ORE., Aug. 16—W. A. Curtin, representing the National In-

dustrial Traffic League of Chicago, and also representing the Portland Shippers Association at the recent I. C. C. hearing here said:

"There is a demand among the shipping public for regulation of the truck lines. The shippers are interested in the development of all modes of transportation and use them all and believe that if this mode of transportation is to be regulated it should be with a regulation that while protecting the shipping public as fully as possible, will also develop the service to maximum efficiency. We believe that they should be compelled to file a sufficient and proper bond and cargo insurance to protect the public against loss of or damage to property intrusted to their care."

Cooper Makes New Mark for 25 Miles

CHARLOTTE, N. C., Aug. 23—Frank Lockhart today won both the 50-mile event and the 150-mile race in the semi-annual races at the local speedway. His average speed for the long race was 120:54 miles an hour and his time 1:14:27. Frank Elliott was second and Eddie Hearne third.

Matching Lockhart's daring and winning performances, however, was Earl Cooper's establishment of a new international record when he negotiated the 25 miles at an average speed of 128.9 miles an hour. His time was 11:38:05. Lockhart was runner-up in this event and Bob McDonogh third. Cooper's record was for mounts having 91½ cubic inch engines.

Loening on Southern Flight

WASHINGTON, Aug. 26—The War Department makes official announcement that a Loening amphibian airplane developed by the Loening Aeronautical Corporation and equipped with both wheels and a boat-like body to enable alighting on land or water will be used on the around-South America airplane flight planned by the Army Air Service. The purposes of the flight are to test the amphibian airplanes, establish the practicability of air communication on the Western hemisphere and strengthen friendly relations with American republics. The trip will cost \$54,000. The flight probably will start from San Antonio, Tex., in the late fall and will require three or four months.

Warner Sees Martin Plant

CLEVELAND, Aug. 23—Assistant Secretary of the Navy Edward P. Warner, in charge of aviation, has just completed an inspection of the Glenn L. Martin plant and the airport of the city. Mr. Warner also investigated the progress being made at the Martin plant with the \$3,000,000 contract for navy planes and expressed himself pleased with results so far. After a hurried trip to the Goodyear and Goodrich tire plants at Akron, Mr. Warner returned to Cleveland, as Glenn L. Martin's guest at dinner at the Union Club.

Wright Travel Plane Wins Reliability Tour

Unusually Accurate Navigation Plays Big Part in Ford Trophy Competition

DETROIT, Aug. 24—A banquet at the Statler Hotel in honor of the competing pilots and attended by men prominent in the industry marked the close of the second annual commercial airplane reliability tour for the Edsel Ford trophy and substantial cash prizes.

The tour, which was won by a Travel Air flown by Walter Beach, of Wichita, Kan., started Aug. 7 at the Ford Airport in Dearborn with an itinerary of Kalamazoo, Chicago, Milwaukee, St. Paul, Des Moines, Lincoln, Wichita, Kansas City, Moline, Indianapolis, Cincinnati, Cleveland and Fort Wayne.

Unusually accurate navigation was a predominating factor in the performance of the winner. Owned by the Pioneer Instrument Co., of Brooklyn, the plane was navigated by Brice Goldsborough, president of Pioneer and inventor of the special earth induction compass and drift indicator which the plane carried.

Held Course in Fog

By means of these and other instruments Pilot Beach was enabled to maintain a straight line course between stations even in the very worst fog. A formula, involving size of engine, speed of ship, and load carried factors, was used in scoring. The winner acquired 4043.3 points for the 2652 mile route. Louis G. Meister's Buhl-Verville Airster was second with 3921.1 points. Beach's prize money was \$2500 and Meister's \$2000. Each pilot in the tour also received \$350 expense money for the trip.

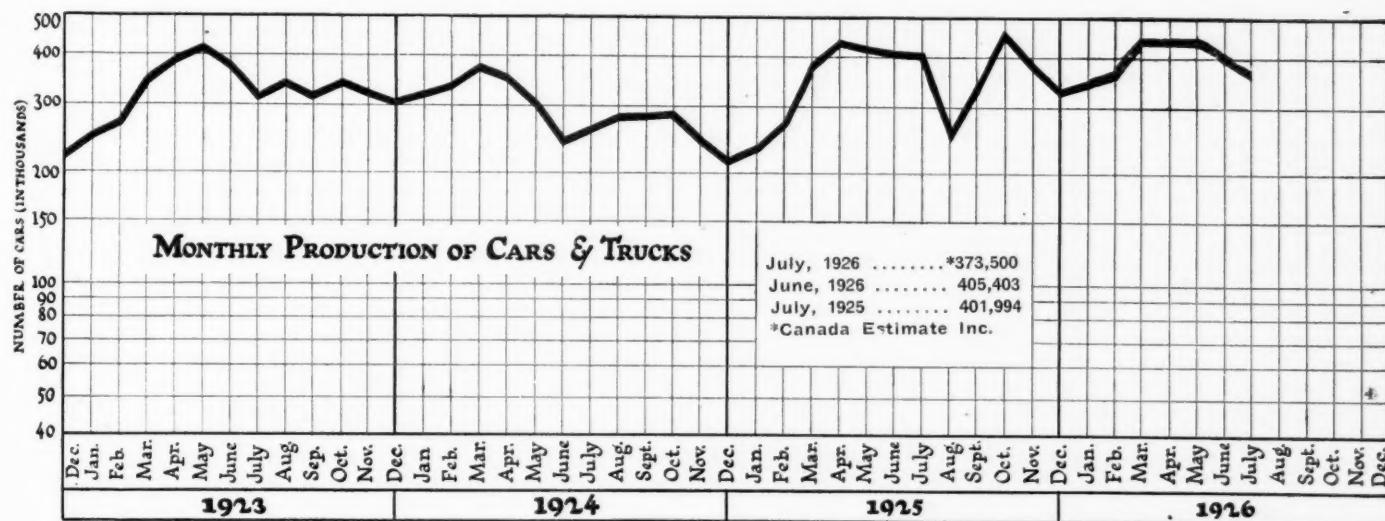
The other nine prize winners were: Eddie Stinson-Detroiter, \$2150; J. W. Livingston, fourth, Waco, \$1850; John Paul Riddle, Waco, fifth, \$1350; E. G. Knapp, Waco, sixth, \$1100; C. E. Clark, Travel-Air, seventh, \$950; Vance Breeze, Ryan Monoplane, eighth, \$850; R. B. Relande, Eagle Rock, ninth, \$750; J. C. Ray, Pitcairn Fleetwing, tenth, \$650; Casey Jones, Curtiss Oriole, eleventh, \$600. The other finishers in order, each of whom received only the expense money of \$350 each, were: Harold F. Pitcairn, Pitcairn Orowing; C. M. Sterling, Swallow; C. S. Irvine, Travel Air; J. A. Williams, Eagle Rock; Philip H. Downs, Woodson; Leroy Manning, Ford Single-motored entry; R. H. Depew, Fairchild; William Munn, Hess Bluebird.

Mayor John Smith, of Detroit, was on the banquet program, as was William McCracken, one of the three secretaries of aviation of the U. S. Government.

Edsel Ford, made the presentation of his trophy to Beach, who retains possession of it for one year.

Of 25 planes entered in the tour, 20 finished and the others retired with minor difficulties. Wright air-cooled radial engines were used in planes finishing first, second and eighth.

July Production Continues Downward



800 Paige Dealers at Sales Convention

DETROIT, Aug. 25—More than 800 Paige and Jewett dealers are guests of the Paige-Detroit Motor Car Co. today at the annual national sales convention.

After Mayor John W. Smith and Harry M. Jewett, president of the company, welcomed the visitors at the Book Cadillac Hotel, they were taken to the factory to view a complete exhibit of Paige and Jewett cars, service equipment and advertising.

After luncheon the visitors inspected the factory and saw modern manufacturing operations. Later they were taken to see the large service department and learn how parts and replacements are distributed.

At dinner in the hotel this afternoon, President Jewett was the principal speaker. A theatrical review furnished the entertainment. The convention closes tomorrow, when H. Krohn, vice-president, sales division; W. K. Towers, advertising manager, and S. E. Jamieson, general service supervisor, will speak. The program will include a boating excursion in the afternoon and in the evening a dinner by Brooke, Smith & French, Inc., advertising agency.

Hayes Wheel Net \$301,455

DETROIT, Aug. 23—Hayes Wheel Co. for six months ended June 30, 1926, reports net profit of \$301,455 after interest and Federal taxes, equivalent after preferred dividends to \$1.23 a share earned on 197,044 no par shares of common stock. This compares with \$880,378 or \$4.12 a share in first half of 1925. Net profit for second quarter of 1926 was \$152,468, equal to 62 cents a share on common, comparing with \$148,987, or 60 cents a share, in preceding quarter and \$658,342 or \$3.17 a share in first half of 1925. Profits for June after expenses, etc., but before Federal taxes was \$38,818.

FIND SUMMER FUEL BEST EVER TESTED

WASHINGTON, Aug. 25.—The fourteenth semi-annual motor gasoline survey, recently completed by chemists of the Bureau of Mines, Department of Commerce, and covering 10 representative cities, reveals that the average motor gasoline marketed in the United States this summer is better than usual, excelling, in fact, gasoline sampled in the summer surveys of the last seven years. The average volatility, the bureau reports, is almost the same as that of the gasoline marketed last winter.

Improvement in quality is indicated particularly at the lower end of the distillation range and at the end point.

Studebaker Service Group Visits South Bend Plant

LOS ANGELES, Aug. 23—To exchange ideas and hear addresses from factory executives on the new Studebaker custom designed sedans, the Southern California Studebaker Service Managers Club has left Los Angeles for the Studebaker factory under the direction of George Ahlf, district service manager.

Vauxhall Reduces Prices

LONDON, Aug. 9—(by mail) New prices have been made effective by Vauxhall Motors, Ltd., on its 14.40 hp. series as follows:

Touring car £495, Saloon £595, two-five-seater £495, coupe £695, Wyndham saloon £695, all-weather £720, enclosed limousine £790.

Austin Profit Lower

NEW YORK, Aug. 23—Austin Motor Co. estimates net profit for the year ended Sept. 30 next as £329,227 as against £447,852 a year ago.

Varied Program Set for Steel Treaters

CHICAGO, Aug. 26—The eighth annual convention of the American Society for Steel Treating and the eighth annual steel and machine tool exposition will be held here Sept. 20-24, inclusive. All technical sessions will be held in the ball room of the Drake Hotel, convention headquarters. The exposition will be located on the Municipal Pier.

Among the many interesting papers to be presented will be the following: "The Iron-Molybdenum System," by W. P. Sykes, of the General Electric Co., Cleveland; "Wear Resistance of Carburized Steel Versus Cast High Manganese Steel," by W. J. Merten, Westinghouse Electric & Mfg. Co., E. Pittsburgh; "The Nature of Oil-Hardening Non-Deforming Tool Steels," by E. C. Bain, Union & Carbon Research Laboratories, Inc., New York City, and M. A. Grossman, United Alloy Steel Co., Canton; "The Hardening of Metals by Dispersed Constituents Precipitated From Solid Solutions," R. S. Archer, Aluminum Co. of America, Cleveland; "Fatigue Strength of Hard Steels and Their Relations to Tensile Strength," J. M. Lessells, Westinghouse Electric & Mfg. Co., E. Pittsburgh; "Solidification of Steel in the Ingot Mold," Alex L. Field, United Alloy Steel Corp., Canton.

Federal Cuts Melon

DETROIT, Aug. 25—Federal Motor Truck Co. directors have announced a stock dividend of 2½ per cent and a disbursement of 20 cents per share initial on the 400,000 shares of new, no par capital stock, which recently was exchanged on a two-for-one basis for the old \$10 par stock.

Dividends at the rate of 20 cents quarterly on the new stock are equal to \$1.60 annually on the old, on which dividends were at the rate of \$1.20 annually.

U. S. Delegates Sail to Attend Congress

Active Participation by American Envoys at Milan Establishes Precedent

WASHINGTON, Aug. 26—For the first time official delegates will represent the United States at the International Road Congress which opens at Milan, Italy, on Sept. 6. This is possible through the acceptance of membership in the Permanent Association of International Road Congresses and authorization for the appropriation of expenses of delegates by Congress during the closing days of the last session.

President Coolidge, acting on the joint recommendation of the Secretaries of State, Agriculture and Commerce, has appointed as official delegates to the Congress: Thomas H. MacDonald, chief U. S. Bureau of Public Roads; Paul D. Sargent, chief engineer State Highway Commission of Maine; John N. Mackall, chairman State Roads Commission of Maryland; H. C. MacLean, commercial attache, Department of Commerce at Rome; H. H. Kelly, assistant trade commissioner, Department of Commerce at Paris, and H. H. Rice and Pyke Johnson, of the National Automobile Chamber of Commerce.

The delegation sailed from New York yesterday and will arrive at Milan in time to take part in all meetings of the Congress.

Three years ago the Congress, held in Seville, Spain, was attended by a number of American engineers, but, as the United States at that time did not hold membership in the association, no official delegates were sent.

Ohio Used Cars Sales Exceed New by 2½ to 1

COLUMBUS, Aug. 20—Sales of used cars in five of the most populous counties in Ohio for the months of May, June and July of this year, as shown by the registration of bills of sale totaled 73,791 as against new car sales of 30,437.

Cuyahoga county in which the city of Cleveland is located had 14,146 sales of new cars and 22,042 sales of used cars. Franklin county, in which Columbus is located, had sales of 4360 new cars and 15,831 used cars.

Hamilton county in which Cincinnati is located had sales of 4991 new and 15,108 used cars; Montgomery county in which Dayton is located showed sales of 2935 new and 10,319 used cars, and Summit county in which Akron is located had sales of 4005 new and 10,491 used cars.

Army Cars Cost \$125,000

WASHINGTON, Aug. 26—More than \$125,000 has been spent this year by the War Department for passenger motor car contracts for the army. In addition \$8500 has been authorized for the purchase of nine motor cars abroad for the use of military attaches.

FARMER ROAD STANDS SELL ACCESSORIES

WASHINGTON, Aug. 26—Automobile accessories are being sold by farmers who conduct roadside markets for the sale of vegetables, fruit and other products, it is announced here by the Department of Agriculture. The Department says the markets are beginning to organize and it is believed this fact caused them to take on the side line of accessories. Among those said to have organized are farmers in eight counties of New Jersey and a group at St. Joseph, Mich. The organization rules set down certain regulatory standards to which the subscribing members must conform.

Wisconsin Business Far Ahead of 1925

MILWAUKEE, Aug. 21—Wisconsin this year is making the most remarkable showing in the history of the automotive industries in respect to new car sales. The July report, just issued by official sources, makes the record all the more impressive, for sales last month were 35 per cent larger than in the corresponding period of 1925.

Every month this year has witnessed a substantial increase in new car sales over the same month in 1925. Adding to the luster of the record is that July business this year represented the largest number of sales in any month since Jan. 1, 1925, with only the exception of May, 1926, the July total this year exceeding even the sales of May, 1925.

The reception given the new models now introduced by most of the factories is so unusual that August sales are believed to be piling up a new record. In 1925, the current month's sales were 5995, and predictions are freely made that 10,000 new cars, and probably more, will be sold in Wisconsin before the end of this month.

That motor truck business is sharing in the prosperity of the industry in Wisconsin is indicated by the fact that in July this year Wisconsin purchased 1408 new trucks, compared with 1051 in July, 1925.

Ford Gains in Indiana

CHICAGO, Aug. 21—According to statistics compiled by the Indianapolis Auto Trade Association the decline in new car sales in Indiana in July as compared with June amounted to 13 per cent. Analysis of the association's tabulations shows further that July's decline in new car sales in that state for Ford, compared with June, amounted only to 4 per cent.

The total new car registrations for all makes in July was 11,369 compared with 13,127 in June. Ford's July total was 4865 against 5100 in June. Ford had 38 per cent of the total sales in June and 43 per cent in July.

Gold Cup Captured by Greenwich Folly

Bests 14 Rivals in Speedboat Regatta—Baby Bootlegger Forced Out

NEW YORK, Aug. 23—Greenwich Folly, owned and driven by G. H. Townsend captured the Gold Cup from 14 rival speedboats in a regatta of keen competition on Manhasset Bay. Baby Bootlegger, the favorite, was forced out by engine trouble in the second of three 30-mile heats. In its first heat, however, the boat, driven by J. G. Vincent, vice-president in charge of engineering of Packard Motor Car Co., set up a new average speed mark of 50.53 miles an hour.

Only five boats finished in the Gold Cup races, Shadow Vite, owned by C. G. Fisher, being second, with Palm Beach Days, Impshi, one of Horace E. Dodge's speedboats, and Miss Columbia, the others in the order named. The fastest time for one lap was made by Imp, which sped the three-mile course at an average of 53.58 miles an hour.

Mrs. Delphine Dodge Cromwell, driving the Nuisance, was the first woman ever to compete for the Gold Cup. Miss Frolic, owned by W. P. Chrysler, was forced out early in the first heat.

Navy to Buy 282 Planes

WASHINGTON, Aug. 26—The Bureau of Aeronautics, Navy Department, announces that approximately 282 planes will be purchased for the Navy during the next year from money appropriated but not as part of the five-year air program authorized by Congress at the last session. The exact number of planes purchased is subject to modification in accordance with actual requirements of the naval aviation service, and four classes are included—100 fighting planes, 47 observation, 61 bombing, torpedo and scouting planes and 74 training.

47 Army Planes to Race

WASHINGTON, Aug. 26—The War Department announces that national air races will be held in Philadelphia from Sept. 4 to 11 as a special event of the Sesqui-Centennial International Exposition with 47 Army planes allotted for participation in the races. Army officer pilots will participate but this personnel has not yet been selected. The Naval Aircraft factory will be used as the operating base for the races.

Uruguay Congress Date Set

WASHINGTON, Aug. 26—The Automotive Division of the Commerce Department learns that the date of the Second Uruguayan National Road Congress which was to be held in Montevideo in June has been postponed until the week of Oct. 5 to 12 of this year. It is believed that the additional time, the Division is informed, for preparation, will justify the delay and insure a "worthwhile conference."

G.M.C. Export Sales Show 52% Increase

Foreign Markets Take 10.03 Per Cent of Total Production in First Half

DETROIT, Aug. 21—General Motors Corp.'s sales to overseas dealers for the first six months of 1926 totaled 63,797 cars, compared with 41,854 cars for the same period last year, an increase of 52 per cent, according to Alfred P. Sloan, Jr., president.

"Our exports for the first six months of the year contributed about 10 per cent of our total business, and should approximate \$100,000,000 wholesale value for the year 1926," said Mr. Sloan. "Last year the wholesale value of our export was \$77,109,696, compared with \$50,929,322 in 1924 and \$39,193,869 in 1923."

"Sales to overseas dealers in number of cars for the second quarter of 1926 are shown herewith and compared with quarters of preceding years:

Period	No. Cars	No. Cars	No. Cars
1st Quarter	31,936	15,577	17,266
2nd Quarter	31,861	26,277	16,690
Six Months	63,797	41,854	33,956
3rd Quarter	25,906	14,209
4th Quarter	33,134	16,680

"During the first six months of this year total sales to dealers for the whole world were 636,087, of which 63,797 were overseas sales. Following is a comparison of the past four years of total sales by General Motors for the whole world, the overseas sales and the percentage of overseas sales to the totals:

Year Ended Dec. 31	Total Cars Sold	No. Sold Overseas	Percent Sales Overseas
1922	456,763	21,872	4.79
1923	798,555	45,000	5.64
1924	587,341	64,845	11.04
1925	835,902	100,894	12.07
1926 (6 mos.)	636,087	63,797	10.03

Big Guayule Demand Seen

NEW YORK, Aug. 21—Mexico is destined to become one of the greatest producers of Guayule rubber within the next two years according to Oscar K. Goll, executive secretary of the Association for the Advancement of Commerce and Industry in Mexico, which has headquarters here. High rubber prices and the monopoly being maintained by the British interests are responsible.

New Knight Car Coming

NEW YORK, Aug. 21—Knight American Patents Co. said this week that a manufacturer of Knight motored cars is soon to present a new six-cylinder model that will closely resemble custom-built Knight motored cars of European manufacture in general appearance and mechanical design. This new car will compete directly in the high-priced car field, the company said. The name of the manufacturer was not given.

COMPLETE HIGHWAY OVER DESERT SAND

SAN FRANCISCO, Aug. 21—The famous desert sandhills, between El Centro, Calif., and Yuma, Ariz., have been conquered by seven miles of concrete pavement, 20 ft. wide. Many engineers believed such a pavement could not be made permanent over these shifting sands, and for years a plank road has served motorists in this section. Heavy interstate traffic in recent years overwhelmed this wooden makeshift, however, and the new pavement was formally opened Aug. 11.

The project has been approved for Federal aid, and, according to R. M. Morton, state highway engineer of California, is regarded as one of the most daring pieces of highway paving ever completed. Division VIII of the California state highway organization, with headquarters in San Bernardino, did the job.

Steel Treaters Society to Honor Gary and Schwab

CLEVELAND, Aug. 23—Elbert H. Gary and Charles M. Schwab are to receive certificates of their election to honorary membership in the American Society for Steel Treating at the annual banquet which will be held at the Drake Hotel, Chicago, Sept. 23, during the week of the annual convention of the society.

The author of the best paper published in the Society's Transactions during the year, will be awarded the Henry Marion Howe Medal on the same evening.

Arthur G. Henry of Chicago will be awarded Founder Membership in the Society on the same evening. He was one of its originators and is known as the father of the exposition, as it was at his instigation that the first National Steel and Machine Tool Exposition was held in connection with the annual convention in 1919.

Argentine Show Date Set

NEW YORK, Aug. 21—The ninth automobile show of the Automovil Club Argentino will be staged at the Pabellon de las Rosas, Dec. 7 to 19. In addition to cars, trucks, buses, tractors and motorcycles, the exhibit will also include all forms of parts and accessories. George E. Quisenberry, editor of *El Automovil Americano*, 225 West 34th Street, New York, has been named representative in the United States of the Automovil Club Argentino.

Raulang Designs New Truck

CLEVELAND, Aug. 21—The Baker-Raulang Co. has designed a crane type electric industrial truck for cupola charging in foundries and other industries. The truck is assembled chiefly from parts used in the other products of the company including hoist and control mechanism.

Speculation Causes Rubber Fluctuation

British Authority Sees No Reason for Shortage—Says Philippine Labor High

NEW YORK, Aug. 21—Patrick Gow, managing director of Gow, Wilson & Stanton, Ltd., of London, England, expressed the opinion today, in a published interview, that the rubber industry generally has a favorable outlook and that there is an adequate supply of crude available to meet all demands at a reasonable price.

Criticism in this country of British and Dutch rubber producers was attributed by Mr. Gow to "politics." He declared that, while any person or firm might engage in growing rubber, to supply the world's demands there was always to be considered the cost of production and particularly the labor cost. For example, he said, that while there may be excellent possibilities of growing rubber in the Philippines, he was unable to see how the rubber cost there could compete successfully with cheaper labor in the British and Dutch rubber producing countries.

"The rise in the price of rubber was largely due to the element of speculation which entered into it here and abroad," said Mr. Gow, "and like other commodities where futures are dealt in on the market, must have always an important bearing.

"I see no reason for a rubber shortage, provided the market is properly handled and growers are assured a reasonable return on the capital invested," Mr. Gow said. "In that event, growers will always see that an adequate supply of rubber is forthcoming. The recent shortage was really created by the sudden increasing demand of those manufacturing tires and other rubber goods. But the supply was increased to meet the extra demand and will always be more or less regulated by the normal law of supply and demand, as in other things.

"New planting is going on all the time in the British and Dutch colonies.

Mr. Gow said it was a mistake to charge that there is a monopoly in rubber. The United States Rubber Company, he said, had 100,000 acres of rubber lands of its own in British and Dutch colonies with an investment there of something like \$30,000,000 to take care of its own needs.

Mack Builds at St. Paul

ST. PAUL, Aug. 25—The Mack Truck Co. has begun construction of a \$600,000 building in the Midway district of the Twin Cities. Under the contract the new structure, covering more than 60,000 sq. ft. is to be completed Dec. 15. Under plans announced by G. H. Hodges of Chicago, vice-president of the company, the new building will be the headquarters of the north central district and will serve eight states with trucks, parts and service. James Bell will be the district manager.

Fisher Reorganizes Lumber Properties

DETROIT, Aug. 21—Edward F. Fisher has been elected president of the Fisher Hurd Lumber Co. and the Pritchard Wheeler Lumber Co., succeeding O. P. Hurd, resigned. James M. Clements of Memphis, Tenn., becomes vice-president of each of the companies to fill vacancies caused by the resignation of Charles T. Fisher.

The Fisher Body Corp., through subsidiaries, has recently acquired 60,000 acres of virgin hardwood timber in Louisiana and Arkansas, William A. Fisher stated. These new holdings together with properties acquired by the Fisher Hurd and Pritchard Wheeler companies and the sawmill and body plant at Memphis will soon be merged into a new company to be known as the Fisher Lumber Corp. The officers will be: Edward F. Fisher, president; James M. Clements, vice-president; Keith M. Spurrier, treasurer; Thomas S. Merrill, secretary, and directors, William A. Fisher, Alfred J. Fisher and Clarence A. Bitting.

Nash Offers Light 6 Coupe

KENOSHA, Aug. 23—A coupe model on the light-six chassis priced at \$925 is announced by Nash Motors Co. The body and wheels are finished in Mallard green and the black moldings run with a double gold striping. There is a sloping rear deck providing a luggage compartment containing 10 cu. ft. of space.

Garford Field Men Meet

LIMA, OHIO, Aug. 21—Business operating policies for the coming year were discussed at a three-day convention of the field organization of Garford Truck Co. at the factory here during the week passed.

Coming Feature Issues of Chilton Class Journal Publications

- Sept. 10—Operation & Maintenance. Annual Bus Issue
- Sept. 15—Commercial Car Journal. Annual Bus Issue
- Sept. 30—Automotive Industries. Annual Production Issue

Hertz Adds New Stations; Will Teach Car Driving

SAN FRANCISCO, Aug. 21—The Hertz Drivurself Co. has opened its fifth station in this city and announces that a sixth will be opened before Sept. 1. This gives the Hertz company 28 Pacific coast stations, all opened since April 15 last.

Approximately 500 cars are in operation in this system on the Pacific coast; 25 more stations are to be opened in the three coast states within six months, and 500 more cars added to the fleet, according to announcement by headquarters here. This statement was issued by W. F. Fielder, general manager of the coast company, who added that a school of automobile driving will be opened here soon for the general public.

Says Detroit to Rule Air

DETROIT, Aug. 21—Addressing the members of the 107th observation squadron of the Michigan National Guard, last night, Capt. E. V. Rickenbacker predicted that in 10 years Detroit will become the aviation manufacturing center of the world just as it is the dominating automobile center today. "People will send from all corners of the globe for their planes, as they now send for their automobiles," he said.

Crops to Determine Argentine Market

DETROIT, Aug. 20—Business in the Argentine is only fair and the immediate prospect is not very promising, though fundamental conditions are sound, declared H. B. Buxton, of Buenos Aires, distributor for Hudson-Essex and White trucks, who is here visiting Hudson factory officials.

Tightening by banks of general credits on account of the partial loss of harvests last year and the low price of cereals, was given by Mr. Buxton as the reason for the slack in Argentine business. "The future will depend upon the success of the 1926-27 crops which will be harvested in December," he said.

The European type of car is not furnishing much competition for American makes, said Mr. Buxton, because they are not suitable for conditions existing in South America. To indicate the preference for American cars he cited the fact that of 26,987 cars imported into Argentine during the first six months of 1926 only 701 were of European manufacture.

Say Oil Frauds Continue

NEW YORK, Aug. 21—The American Fair Trade League issued a statement today asserting that a test has shown that 79 per cent of the oil service stations in this city are deceiving automobile owners regarding the quality of lubricating oils sold.

An Associated Press dispatch reported that Dr. Henry Masson, Professor of Chemical Engineering at New York University, who made the tests on sample purchases from local service stations, said his findings revealed a condition which "bids fair to eclipse all previous records of public deception."

Dr. Masson reported that "a serious situation has arisen."

Calendar of Coming Events

SHOWS

Boston, Mass.	Sept. 27-Oct. 2
Radio Exposition, Mechanics' Bldg.	
Brussels	Dec.
Buenos Aires	Dec. 7-20
Ninth Argentine Automobile Show, Palermo Park.	
Chicago	Sept. 20-24
National Steel and Mechanical Tool Exposition, Municipal Pier, American Society for Steel Treating.	
Chicago	Sept. 27-Oct. 2
National Radio Exposition.	
Chicago	Nov. 8-13
Coliseum, Automotive Equipment Association.	
Chicago	Nov. 15-19
Hotel Sherman, National Standard Parts Association.	
Chicago	Jan. 10-15
Coliseum, American Road Builders' Association.	
Chicago	Jan. 29-Feb. 5
National Coliseum, National Automobile Chamber of Commerce.	
Chicago	Jan. 29-Feb. 5
Annual Salon, Hotel Drake.	
Cleveland	Oct. 4-8
Public Auditorium and Annex, American Electric Railway Association.	
London	Oct. 4-9
Olympia Motor Cycle.	
London	Oct. 21-30
Los Angeles	Feb. 12-19
Annual Salon, Hotel Biltmore.	

Milan Sept. 1-20
Exposition.

Milan Sept. 6-13
Fifth International Road Congress.

New Haven Sept. 7-10
Machine Tool Exhibition.

New York Sept. 13-18
Radio World's Fair, Madison Square Garden.

New York Nov. 24-Dec. 4
Annual Salon, Hotel Commodore.

New York Jan. 8-15
National, Grand Central Palace, National Automobile Chamber of Commerce.

Paris Oct. 7-17
Auto Salon, Grand Palais.

Paris Dec. 3-19
International Aeronautic Exposition, Grand Palais.

Prague Sept.

CONVENTIONS

American Electric Railway Association, Public Auditorium and Annex, Cleveland	Oct. 4-8
American Road Builders' Association, Congress Hotel, Chicago	Jan. 10-15
American Society for Steel Treating, Municipal Pier, Chicago	Sept. 20-24
Associated Manufacturers of Fabric Auto Equipment, Inc., La Salle Hotel, Chicago	Nov. 13

Automotive Electric Association, Delaware Water Gap Sept. 13-16

Automotive Equipment Association, Coliseum, Chicago Nov. 8-13

National Association of Finance Companies, Chicago Nov. 15-16

National Standard Parts Association, Hotel Sherman, Chicago Nov. 15-19

National Tire Dealers Association, Inc., Memphis, Tenn. Nov. 16-18

S. A. E. MEETINGS

National

Boston, Nov. 16-18, National Transportation and Service.

Chicago, Sept. 21-23, Production Engineering, Hotel Sherman.

Philadelphia, Sept. 2-3, Aeronautical.

RACES

Altoona Sept. 6

Atlantic City Sept. 26

Dallas, Texas Nov. 11

Laurel, Md. Oct. 23

Los Angeles Nov. 25

Philadelphia Sept. 4-11
National Air Races.

Salem, N. H. Oct. 13